





Digitized by the Internet Archive  
in 2013



NINETEENTH REPORT  
OF THE  
FISH COMMISSIONERS  
OF THE  
STATE OF CONNECTICUT,  
TO THE  
GENERAL ASSEMBLY,  
JANUARY SESSION,  
1885.



HARTFORD, CONN.:  
PRESS OF THE CASE, LOCKWOOD & BRAINARD COMPANY.  
1885.



# State of Connecticut.

---

## REPORT.

---

*To His Excellency the Governor, and the General Assembly of Connecticut:*

The Commissioners on Fisheries respectfully present their nineteenth annual report. The subject of the pollution of streams continues to attract attention from a constantly increasing number of those interested in the public welfare. While the fishermen believe that the decrease in the number of fishes may be attributed in no small degree to this cause, the physician asserts that certain prevalent forms of disease arise from the same poisonous influence. The effect of such pollution becomes a matter of serious consideration when the population of a whole city like Hartford is compelled to rely for its drinking water upon the Connecticut River, into which the sewage of Springfield has been emptied, and the refuse matter of the mills at Holyoke and Windsor Locks has been drained. If it is further recollected that this drinking water is furnished, when in consequence of prolonged drouth, the ordinary water supply is exhausted, and the river contracted to its narrowest limits so that the poison is more concentrated, the danger becomes apparent. The question arises, in all these cases, What is the proper remedy? The mill-owners naturally ask, What are we going to do with these substances, if we do not empty them into the stream?

Facts show that in many cases, these deleterious materials may be saved and utilized for the farmer or the manufacturer. A clipping from a Scotch paper shows what one woolen mill proprietor does with his refuse matter. Why cannot Yankee ingenuity find a similar use for those materials now emptied



from the mills into the streams and rivers, with such deadly effect upon fishes, and so deleterious to the health of such human beings as may be compelled to drink the waters so polluted?

A couple of months ago, when the Marquis and Marchioness of Salisbury were visiting the Marquis of Lothian at Monteviot, the distinguished party were shown over the woolen mills at Jedburgh, belonging to Messrs. J. & W. Hilson, and were greatly enlightened in the process of woolen manufacture therein carried on. To Lord Salisbury, as he then stated, not the least interesting of the many sights was the system of utilizing the waste liquor flowing from the works, which was at one time considered of little use, and gave no end of trouble in getting rid of it. The distinguished nobleman was shown samples of the products of this refuse, which were converted into various articles of considerable commercial value. For some time Messrs. Donaldson & Co., oil distillers and refiners, Hawick, have received from Messrs. Hilson and other manufacturers the refuse of which we speak, and have by chemical processes turned it to good account. This week we had the pleasure of examining a range of some thirteen samples of their products, these having been made up for the further inspection of the Marquis of Salisbury, to whom they have been sent. The liquid in the original state is the waste arising from the scouring of woolen goods and yarns, the technical designation of the recovered product being "magma." This material, which has a soft, spongy appearance, is put into canvas bags and subjected in hydraulic presses to a pressure of about two tons to the square inch. The oily matter finds its way from the canvas, leaving a black-looking refuse which is used afterwards for top-dressing and hop-growing. The oil is then distilled, and a combination of cloth, oil, and stearine produced. This distillate is afterwards separated by being enveloped in sailcloth sheets, the oil as before coming through the sheets and the stearine remaining in them. The oil is largely used in wool and jute spinning, and the stearine in the manufacture of composite candles. The stearine itself, if wanted of a very high quality, is again repressed between sheets of sailcloth and hot iron plates, and then becomes the beautiful product known as hot-pressed stearine, used in the making of tapers. In the process of distillation, a hard black, pitch is left in the stills, and this, it has

been found, is invaluable as a lubricator in iron rolling mills in cases where the journals get so hot that an ordinary oil would evaporate and take fire. A light spirit oil is also got in the course of distillation, and this is serviceable for dissolving india-rubber. The cloth oil is also converted into soft soap. When all the processes are completed the only remnant of the spongy "magma" is a pure liquid, as clear as the clearest water, and this is the sole part of the original refuse for which a purpose has not as yet been found. It will be seen that besides displaying considerable chemical skill in this matter, Messrs. Donaldson & Co. have invented new processes for the refining of the "magma" from the waste liquors of factories, the disposal of which has long been an all-absorbing question among manufacturers. Where rivers were polluted the riparian proprietors were loud in their complaints, and now that a remedial means has been devised it is to be trusted that it will be duly tested. By the process we have described, a very simple yet effective method of preventing river pollution, in this form at least is provided, by which also an apparent valueless product is reclaimed. We heartily recommend the matter to the attention of manufacturers generally.

The term "magma" embraces the substance recovered from the liquors used in washing the wool and pieces of tweed. These are pumped up into a tank, where they are treated with vitriol. After the liquid has settled, the greasy, oily matter comes to the surface, and the watery liquor is run off, being purified before entering the river by passing through a bed of gravel and ashes. The residuum is let into another tank, and, after settling, the product known as "magma" is put into casks and sent to Messrs. Donaldson for their further treatment.

The work of the commission during the past year has been confined to the hatching of shad and the distribution of trout, details of which will be found in this report.

Your commissioners believe that the amount appropriated for the use of the commission can be better employed in this way than in any other, especially as it has seemed to be the opinion of the General Assembly that further attempts at propagating salmon should be discontinued.



## SHAD.

The catch of shad in the Connecticut River, in 1884, was less in number than in 1883, the actual number reported for each year being, for

1883,	.	.	.	177,308
1884,	.	.	.	150,045
Decrease,	.	.	.	<u>27,263</u>

The numbers given do not include the entire catch of the river, but only that portion extending as far up as Essex. They include, also, the pounds near and adjacent to the mouth of the river, in Long Island Sound.

Mr. Chalker reports the catch of shad in the pounds as follows :

15 traps in Saybrook,	.	.	.	.	36,600
15 traps in Westbrook,	.	.	.	.	42,800
14 traps in Clinton,	.	.	.	.	12,700
9 traps in Madison,	.	.	.	.	3,200
					<u>95,300</u>

## HAULING SEINES.

2 in Saybrook,	.	.	.	.	14,000
1 in Lyme,	.	.	.	.	1,500
2 in Essex,	.	.	.	.	4,000
					<u>19,500</u>

## GILL NETS.

5 in Saybrook,	.	.	.	.	5,800
7 at Saybrook,	.	.	.	.	8,900
9 in Lyme,	.	.	.	.	7,845
18 at Brockway's Ferry and Hamburg,	.	.	.	.	9,000
6 at Comstock's Ferry,	.	.	.	.	3,000
3 at Essex,	.	.	.	.	700
					<u>35,245</u>

As the report of the pounds this year is made by traps, instead of by pounds as heretofore, Mr. Chalker was asked for an explanation thereof, and his reply is here given :



SAYBROOK, October 20, 1884.

DR. W. M. HUDSON :

*Dear Sir*—My reason for reporting fifteen traps or bowls, instead of six pounds in Saybrook, as heretofore, was to show that there was about the same amount of fishing done in Saybrook by six companies, as in Westbrook by ten companies, and in Clinton by eight. There has been but little difference in the actual number of pounds fished in the towns for five years. I shall be happy to give any further explanation or information that you may desire.

Respectfully,

R. B. CHALKER.

Per A. B. C.

In explanation, it may be stated that an ordinary pound consists of a leader of stakes and netting extending from near the shore out into the Sound for a long distance, and at intervals bowls or traps are arranged for the capture of the shad, and from which they are taken. There are generally two or three of these traps to each leader, so that the six pounds of 1883 might be equivalent to the fifteen traps of 1884.

While there was a decrease in the numbers of shad taken in the lower part of the river, Mr. Fenton reports an increase in the Farmington River, one of the tributaries of the Connecticut. The actual figures are:

for 1883,	.	.	1,155
for 1884,	.	.	3,400
Increase for 1884,	.	.	<hr/> 2,245

The fishermen account for the decrease of shad taken at the lower part of the river, and in the pounds, in various ways. There was at one time early in the season an influx of large bluefish, weighing from six to ten pounds each, which coasted along the shore, and many of them were taken in the pounds. It was thought by some that the shad, through fear of the bluefish, were temporarily driven from the vicinity of the pounds and wandered elsewhere. Others think that the extension of the breakwater at the mouth of the Connecticut River, by constantly increasing the flow of the water to the westward, inclines the shad to forsake the

Connecticut River and enter either the Quinnipiac or Housatonic Rivers. There are some remarkable facts connected with the year's catch of shad in those rivers, which tend to give credibility to the latter theory. While the catch of shad in the Connecticut River decreased, a very great increase is reported both from the Quinnipiac and the Housatonic Rivers. The actual number taken in the Quinnipiac is not given, but a clipping from the *New Haven Register* of April 30th, 1884, here inserted, will give some idea of the facts :

#### SHAD OF LOCAL CATCH.

The largest haul of shad taken this season at Red Bank on the Quinnipiac River has been 344 large fish. It is supposed that the new breakwater tends to drive the shad up the Quinnipiac. Never within the memory of man did shad run so well in the Quinnipiac River. The stock in the North Haven fisheries has risen from \$3 to \$50, and in a few instances \$100 is asked. The Connecticut River fishers find the New Haven market supplied with shad.

Reliable information was also given to the commissioners that at one fishing place alone on the Quinnipiac River, seven thousand shad were taken during the season. As the previous catch of shad in this river has been comparatively insignificant for many years, the importance of the great change becomes apparent, and the catch in the future will be watched with great interest.

On the Housatonic River the reports of a considerable increase of shad were so common, that an effort was made to arrive at the actual facts, which was not difficult, as there are no pounds at its mouth, and the distance from the mouth to the Birmingham dam is not very great. Mr. Henry J. Fenton, who had unusual facilities for collecting the returns, reports as follows :—

Catch of shad in the Housatonic river for 1883 and 1884.

In 1883—11 Hauling Seines took	11,550
27 Gill Nets	4,500
	<hr/> 16,050

In 1884—12 Hauling Seines took	39,000
47 Gill Nets                   “	13,000
	<hr/> 52,000

More than three times as many were taken in 1884 as in 1883, and it is difficult to account for this enormous increase, unless upon the hypothesis that some of the Connecticut River shad were turned from their usual course. Col. McDonald of the U. S. Fish Commission, at the last meeting of the American Fishcultural Association, read a paper on the “Natural Causes influencing the movements of Fish in rivers,” in which he suggested the theory that the anadromous fishes, like the shad, are guided in their movements largely by the temperature of the water, always seeking, as far as possible, water of about 60° Fahrenheit. As the theory is somewhat novel, and in direct opposition to the old idea that shad always return to the river in which they are hatched, the principal part of the paper is here given.

The influence of water temperatures, in determining the presence or absence of certain species of fish in certain areas of water, has been observed both in regard to the ocean and the river species which are the object of commercial fisheries. Observation of water temperature and its relations to the migrations of fish have not been continued long enough to justify us in formulating conclusions, but the drift of investigation and observations goes to show that there is for each species a normal temperature in which it prefers to be, and that its migrations are determined by the shifting of these areas of congenial temperature under the influence of the seasons.

Observations, now continued for several years, have led to the conclusion that, in the case of the shad, the normal temperature, toward which it is ever moving, is about 60 degrees Fahr. The data upon which this conclusion is based are as follows :

First—The shad make their appearance in the St. Johns River, Florida, as soon as the temperature of the river falls to 60 degrees, or thereabouts, which takes place from the middle of November to the 1st of December. At this time the river is colder than the ocean plateau outside, and the movement or migration is from



warmer to cooler areas in the direction of the normal temperature of 60 degrees.

Second—The shad which are spawned in the Potomac in April, May, and June, remain in the river all summer. Schools of them may be frequently seen in the river in front of Washington. They continue abundant until the latter part of October or 1st of November. When the temperature falls below 60 degrees, they begin to drop down the river in their migrations seaward. In this case they are moving from cooler to warmer waters, and toward the normal temperature of 60 degrees.

Third—The beginning of the spring run of shad into the Potomac river is about coincident with the date when the river temperature rises above that of Chesapeake Bay. In this case, too, the shad are moving from cooler to warmer waters, and in the direction of the normal temperature of 60 degrees, for the temperature of both bay and river is at the beginning of the season always below 60 degrees.

It will be seen, therefore, that wherever we have been able to intercept the shad in its migrations and place it under observation, it is always moving in the direction of the normal temperature of 60 degrees.

Assuming it to be true as a general fact that the shad in their ordinary migrations are ever traveling on temperature paths which lead to the normal temperature of 60 degrees, it becomes possible to determine the law, the rate, and the limit of their movements in a certain area, by tracing the shifting of the areas of congenial temperature under the influence of the seasons.

The data for the discussion are furnished by the records of observations of water temperatures, made at the light-houses by the direction of the Light-house Board, and at Washington by an employee of the U. S. Fish Commission.

The three stations selected for comparison of ocean, bay, and river temperature are (1) Winter Quarter Shoals for the ocean plateau, (2) Wolf-trap Light for Chesapeake Bay, and (3) Washington, D. C., for the Potomac river.

The station at Winter Quarter Shoals, is up the coast about forty miles north of Cape Charles, and is about eight miles from shore. It is close to the edge of that cold Arctic current which wedges itself down between the Gulf Stream and the shore, and bringing with it the temperature of Arctic latitudes, builds a wall of mini-

mum temperature beyond which the shad probably never pass in their migrations.

The only records of bay temperature available for the season of 1881, were the signal service observations in Norfolk Harbor. These records, which give the temperature of Elizabeth River rather than the bay, indicate more rapid fluctuations than is possible in the general temperature of the bay, and give a daily range of temperature several degrees higher than that of the bay.

This correction I have approximately applied in the discussion of the temperature observations of 1881, in order to bring them into harmony with the observations of bay temperature for 1882, and 1883, which were made by observers at Wolf-trap Light.

This locality is on the west shore of the bay, half-way between the Rappanock and York Rivers, and being well out from the shore, little influenced by local variations, the temperatures taken here may therefore be taken to represent the general temperature of the bay waters for corresponding dates.

The result of the study of the data above indicated are graphically presented in three outline maps of the Chesapeake and Delaware basins, illustrating the movements of the areas of congenial temperatures under the influence of the seasons, and in the chart showing the relations between the temperatures of the Potomac River during the fishing seasons of 1881, 1882, and 1883, and the fluctuations in the shad fisheries of the river at the same period.

[The rest of Col. McDonald's remarks were oral and with reference to the maps and charts exhibited.]

The conclusions deduced by him from the discussion of the data presented were as follows:

The temperature records for 1881, '82, and '83, indicate that for the winter months the area of maximum temperature is not in the rivers or in the bay, but on that ocean plateau outside, extending from the capes of the Chesapeake to the Delaware breakwater. The presumption, therefore, is that the schools of shad belonging both to the Chesapeake and the Delaware have their common winter quarters on this plateau. When, under the influence of the advancing seasons, the waters of the Chesapeake and the Delaware bays become warmer than on this plateau, the migration into continental waters begin. The proportion of the entire run that will be directed to the Delaware or the Chesapeake will be determined at this time. If the northern end of the area warms up more

rapidly than the southern, then an unusual proportion of the shad will be thrown into the Delaware. On the other hand, cold waters coming down the Delaware may effect a contrary movement, and throw the schools of shad almost entirely into the Chesapeake; thus leading to a partial or total failure of the shad fisheries of the Delaware for the season.

When the schools of shad have entered the Chesapeake, their distribution to the rivers will be determined in the same way by temperature influences operating. If the season is backward, so as to keep down the temperature of the larger rivers which head back in the mountains, then the run of shad will be mainly into the shorter tributaries of the bay, which have their rise in the tide-water belt, and which, of course, are warmer at this season than the main rivers.

Again, warm rains at the beginning of the fishing season in our large rivers, and the absence of snow in the mountains will determine the main movement of the shad into the larger rivers of the basin; and if, when the schools enter the estuaries of these rivers, they encounter a temperature considerably higher than that in the bay itself, the movement up the river will be tumultuous; the schools of shad and herring all entering and ascending all at once, producing a glut in the fisheries such as we sometimes have recorded.

It follows, therefore, in the light of these facts, that we may have a successful fishing on the Delaware, accompanied by a total or partial failure in the Chesapeake area, and *vice versa*; and considering the Chesapeake area alone, we may have a very successful fishery in the aggregate, yet accompanied by partial or total failure in particular streams under the influence of temperature conditions, as indicated. Statistics of the shad fishery, if they are to furnish a measure of increase or decrease, must include the aggregate catch of the Chesapeake and Delaware Rivers, and indeed of the rivers much further to the north. Statistics based upon a comparison of the catch in the same river in different seasons, are of no value as serving to give a measure of the results of artificial propagation.

To what extent any or all of these theories may account for the decrease of shad in the Connecticut river, and their increase in the Quinnipiac and Housatonic rivers, in 1884, can only be determined by further observation.



## SHAD HATCHING.

Shad hatching operations, under the superintendence of Mr. H. J. Fenton, were commenced on the Farmington river, at Poquonock, about the 20th of May, and continued to June 4th, at which date he had hatched and turned into the river 686,000 young shad. It being impracticable to continue operations at that locality for a longer period, owing to the quarrels of the fishermen, Mr. Fenton was directed to make an attempt upon the Housatonic river.

He commenced work there on June 11th, and continued taking eggs until July 2d, at which date he had secured 3,420,000 eggs, and hatched about 2,700,000 young shad, losing about fifteen per cent. of the eggs taken, from various causes mentioned in his report, here given.

*To the Honorable Board of Fish Commissioners:*

GENTLEMEN:—I commenced work at Birmingham on the night of June 11th, with the following good results, after overcoming many obstacles here, which we do not find on the Farmington or Connecticut rivers, at the hatching places. As there is no chance to float our boxes above tide water, it necessarily leaves the boxes without the required current for about three hours on each flood tide, which is the cause of the large percentage of loss, as compared to other hatching places. I tried floating the boxes above the dam; but here there was no current at all, and in the canal of the Ousatonic Water Company, I could get the required current through the day, but at night-time, when the shops were shut down, I was twelve hours at a time without any current, which was much worse than in the river on tide water. It may seem a little strange, the difference of temperature of the water the same day, which is explained in this way: the low degree being taken on ebb tide, while the higher degree being on flood tide. The remarkable high temperature of 86° and 87° was on flood tide, and as there are acres of stones below the dam that are exposed to the hot sun, when the tide comes in the water gets very warm. The uneven temperature of the water also increases the loss of eggs in the boxes, and I would suggest to your Board, that the McDonold Shad Hatching Jar be procured for future use, as there are con-

venient opportunities here for using them. Hoping your Board will look upon this suggestion with favor, I remain

Yours very truly,

HENRY J. FENTON, *Superintendent.*

Half of the number of young shad were turned into the Housatonic River, and the other half were transported to the Connecticut River and turned out above the railroad bridge at Warehouse Point.

Earlier in the season, one million of young shad from the Potomac River were presented to the State by Prof. S. F. Baird, U. S. Fish Commissioner, and were put into the Housatonic River at New Milford.

The number of young shad placed in the Connecticut and Housatonic Rivers, in 1884, including those hatched at Poquonock, those hatched at Birmingham, and those presented by Professor Baird, aggregates more than four millions, and it would seem that good results must ensue in the future from such successful operations.

*Report of Shad Hatching Operations on the Housatonic River, at Birmingham, Conn., Conducted by Henry J. Fenton, Superintendent:*

Date.	Temp. of Water.		No. of Eggs Taken.	No. of Fish Planted.	Remarks.
	Morn.	Eve.			
June					
12,		72	280,000		
13,	68	76	380,000		
14,	74	78	200,000		
15,	76	77			Sunday.
16,	71	79			
17,	72	80		680,000	
18,	74	82			
19,	72	81	720,000	200,000	
20,	78	84	400,000		
21,	79	87	280,000		
22,	84	86			Sunday.
23,	76	81	200,000	720,000	In Connecticut River.
24,	74	79		400,000	In Connecticut River.
25,	70	78			
26,	72	76	60,000	680,000	
27,	74	78			
28,	72	74	240,000		
29,	76	81			Sunday.
30,	74	78	200,000		
July					
1,	80	84	260,000		
2,	76	83	200,000		
3,	76	85		600,000	In Connecticut River.
4,	74	82			
5,	70	78		140,000	
			3,420,000	3,420,000	Less 15 per cent. loss.
				513,000	
				2,907,000	Total number planted.

### BROOK TROUT.

The distribution of brook trout was continued last year, and 600,000 were divided among one hundred and fifty applicants, giving 4,000 to each. These were sent to all parts of the State, and the reports of the young trout seen in the brooks, recently almost barren, show that good results are to be anticipated. During the coming season the number avail-



able for distribution will be only 450,000, as the Commissioners do not feel warranted in devoting a larger portion of the annual appropriation to this purpose. As these reports annually are read by large numbers of the people who have not read the preceding ones, the proper method of obtaining young trout by any individual is here copied from last year's report.

All applications for trout must be made to some one of the Commissioners on or before the first day of March, at which time the schedule of distribution is made. The trout are deliverable free at the hatching-house in Poquonock. Any person who prefers to have them sent to other parts of the State, will be expected to pay the traveling expenses of the messenger, and \$3.00 per day for his time spent in reaching the place, and return.

Combinations can frequently be made whereby the expense to each person is reduced. Applicants will be expected to have a suitable conveyance at the designated railway station, to carry the young trout immediately on arrival to the brook or stream to be stocked, and then return the can to the station.

No young trout will be sent by express, as the danger of loss is too great, the constant attention of an attendant being in all cases required. The number of trout supplied to each applicant will be proportioned to the number of applicants.

It is pitiful to see the great number of fingerling trout which are annually exposed for sale in the markets. If they could not be sold, they would not be caught, and your Commissioners are of the opinion that a law should be enacted forbidding the sale of any young trout less than six inches in length, except when alive, to be used for stocking ponds or streams.

A list of the one hundred and fifty persons, each of whom received 4,000 at the last distribution, is here given :

*Distribution of Brook Trout Fry made by Henry J. Fenton, for the year 1884; 4,000 to each of the following persons, with their names and post-office address :*

Alexander Hawley, Bridgeport.	R. H. Ashmead, Windsor.
E. S. Rice, Simsbury.	J. W. Hakes, Windsor.
J. Watson Beach, Hartford.	J. P. Safford, Windsor.
W. D. Hubbard, Hartford.	G. F. Scarborough, Hartford.
T. F. Plunkett, Hartford.	H. C. Wilcox, Meriden.
Geo. Bartholomew, Hartford.	Fred. S. Porter, Northfield.
W. E. Wilcox, Meriden.	John A. Morgan, Greeneville.
S. N. Risley, Broad Brook.	Hubert Schenkum, New Britain.
Wm. P. Green, Norwich.	E. R. Magnuss, New Britain.
B. T. Green, Norwich.	J. Warren Tuck, New Britain.
J. C. Wheeler, Southford.	Ralph C. Dunham, New Britain.
H. S. Wheeler, Southford.	C. E. Mitchell, New Britain.
F. H. Keney, Southford.	Chas. F. Corbin, New Britain.
Austin Hine, Southford.	E. L. Prior, New Britain.
Geo. P. Pickett, Litchfield.	Henry A. Bailey, New Britain.
Hon. C. W. Barnes, Norwich.	S. C. Dunham, New Britain.
E. S. Rice, Norwich.	F. Wetmore, New Britain.
Archibald Mitchell, Norwich.	John Bassett, New Britain.
John Porteous, Norwich.	P. Corbin, New Britain.
Z. R. Robbins, Jr., Norwich.	S. P. Storrs, New Britain.
Henry Andrus, Hartford.	A. E. Wales, New Britain.
B. H. Palmer, Greeneville.	C. O. Case, New Britain.
E. P. Slocum, Norwich.	Geo. Follett, Norwich.
John M. Taylor, Hartford.	J. A. Bush, Winchester.
David Torrance, Birmingham.	R. E. Hardenbergher, Winsted.
J. W. Hill, Waterbury.	Wm. C. Case, Hartford.
O. T. Hungerford, New Hartford.	Harlow Messenger, Weatogue.
L. E. Gillette, New Hartford.	W. A. Stocking, Weatogue.
W. E. Thompson, New Hartford.	G. F. Raymond, New London.
Geo. P. McLean, Simsbury.	E. S. Brown, Poquonock.
Stephen Goodrich, Hartford.	Wm. D. Bishop, Bridgeport.
E. S. Sykes, Hartford.	C. T. Inslee, Warehouse Point.
E. E. Champlin, Litchfield.	Charles H. Pine, Derby.
H. C. Baldwin, Beacon Falls.	C. F. Beckwith, Stafford Springs.
J. C. Flynn, Naugatuck.	Clinton B. Davis, Higganum.
F. W. Tolles, Naugatuck.	F. H. Hart, New Haven.

Chauncey Eno, Simsbury.	C. H. Briscoe, Thompsonville.
O. S. Chaffee, Mansfield Center.	E. Z. Webster, Norwich.
Elliott P. Skinner, Andover.	F. H. Whittelsey, Warehouse P't.
E. B. Hyde, Andover.	John H. Sage, Portland.
Frank L. Fillow, Bethel.	James P. Hall, Hartford.
Geo. S. Potter, Bethel.	Geo. W. Sword, Thompsonville.
Frank P. Ferry, Bethel.	J. W. Webster, Waterbury.
John O. Beebe, Bethel.	Chas. Weed, West Granby.
C. H. Case, Hartford.	Jarvis Reed, West Granby.
John Irish, Norwich.	James Fancher, West Granby.
W. S. Andrews, Hartford.	Geo. O. Beach, West Granby.
R. P. Kenyon, Hartford.	Hon. John R. Buck, Hartford.
Willis S. Sargent, Norwich.	Ralph S. Smith, New London.
F. E. Tuttle, Hamden.	Geo. D. Goodrich, Rockville.
B. L. Mann, Hamden.	A. H. Bennett, Canterbury.
E. D. Johnson, Norwich.	Hon. T. M. Maltbie, Granby.
N. D. Sevin, Norwich.	Hon. Clark E. Barrows, Eastford.
Daniel M. Lester, Norwich.	Hon. M. Richardson, Lime Rock.
John Mitchell, Norwich.	Hon. L. A. Cooke, Barkhamsted.
J. Cleveland Capen, Bloomfield.	Hon. E. C. Dennis, Stafford Sp'gs.
G. L. Cary, Canterbury.	Wm. B. Glover, Fairfield.
Harvey Goddard, North Granby.	Nicholas Staub, New Milford.
A. W. Allen, Thompsonville.	C. W. Cowles, Manchester.
T. P. Cook, Winsted.	Henry J. Moran, Windsor Locks.
Jerome Judson, Sandy Hook.	A. C. Huntington, Poquonock.
Orin H. Goddard, North Granby.	Lyman B. Jewell, Hartford.
C. B. Bishop, Litchfield.	Hubert Williams, Lakeville.
C. W. Hinsdale, Litchfield.	Chas. H. Owen, Hartford.
Henry A. Lyman, Southport.	Norris Holcomb, Hartford.
W. S. Downs, Birmingham.	Dwight Buell, Hartford.
W. H. Williams, Lakeville.	H. L. Bunce, Hartford.
E. C. Sherwood, Southport.	F. P. Warren, Killingly.
R. N. Parish, Oakdale.	Chas. Ockford, New London.
P. S. Burrall, Lime Rock.	W. Atwater, Birmingham.
S. P. Ensign, Lime Rock.	R. S. Hinman, Birmingham.
Geo. Landon, Chapinville.	C. F. Poindexter, Hartford.
J. J. Landon, Chapinville.	Dwight Bacon, Simsbury.
A. J. Spurr, Chapinville.	Miles Goddard, North Granby.
J. P. Studley, New Haven.	C. A. Birge, Windsor Locks.



In addition to these, Prof. S. F. Baird, U. S. Fish Commissioner, kindly presented to the State, 12,000 brook trout eggs, which were sent from Northville, Michigan, to the hatching-house at Poquonock. From these were produced 8,400 young trout which were all placed in one brook in Hartford County.

Prof. Baird also presented the State with 6,500 eggs of the California Rainbow trout (*Salmo iridea*) which were also sent to the hatching-house at Poquonock. They arrived in very poor condition and only 3,400 fry were hatched from them. They were all sent to Commissioner Woodruff for disposal, and were placed in streams in the western part of the State.

#### SALMON.

As was announced in the last report, no appropriation for salmon-hatching was made last year, and consequently nothing was done with a view to further propagation of this species. Reports are frequently received from the various ponds and lakes of the State in which the land-locked salmon have been placed, and captures of these fish weighing from three to six pounds each are announced. Only two salmon were reported to have been taken in the Connecticut River during the year, one at Lyme and one off the railroad depot in Saybrook. In addition to these, three were taken in the Saugatuck River at Westport, as will be seen from the following letter from Mr. E. M. Lees.

WESTPORT, CONN., July 16, 1884.

DR. HUDSON :

*Dear Sir.*—Mr. Morris E. Allen, during the last three evenings, has caught in the Saugatuck River, three salmon, the largest weighing nine pounds. He caught them with an eel spear while fishing for eels.

Yours Truly,

EDWARD M. LEES.

It is not the intention of the Commissioners to make further attempts at salmon propagation unless especially directed to do so by the General Assembly.

Mr. Henry J. Fenton, the Superintendent of the hatching-house at Poquonock, has kept a few land-locked salmon in the ponds connected with the establishment, and from these fish he succeeded in taking a sufficient number of eggs to produce 10,000 young fish, which he gave to the State, and they were put into the Twin Lakes in Salisbury at the expense of Mr. Henry Andrus, a public-spirited citizen of Hartford.

#### GERMAN CARP.

Every year some demands are made upon the Commissioners for German Carp. In no case reported have they proved an actual success in Connecticut, though a paragraph has recently appeared in some of the papers stating that one gentleman in Stamford has a pond well stocked, in which they thrive and breed well. Any person desiring to make an experiment with them can do so by addressing any one of the Commissioners, who will furnish a blank application to Prof. S. F. Baird, U. S. Fish Commissioner, by whom alone the carp are supplied. They are generally distributed in November, when the ponds in Washington are drawn off, and if sent at that season of the year to the north, they soon go into winter quarters, and do not commence to feed again until the warm days of spring have removed the ice from the ponds, and raised the temperature of the water. As in this climate, they only feed during six months of the year, they cannot be expected to grow as fast as in the southern States, where they feed during the whole year. As an article of food, they do not rank with the trout, salmon, shad, or black bass, but are more to be compared to the dace and sucker. The places best adapted to them are shallow, sluggish, grassy ponds, where they can find plenty of mud in which they root about to such an extent as to have received the name of "water hog."

#### FISHWAYS.

During the year past many newspaper articles have appeared in reference to the Birmingham dam on the Housatonic River, and some of the residents of Fairfield County

have been demanding that the Fish Commissioners should immediately order a fishway to be constructed over the dam. Perhaps in order to understand the position of the Commissioners in this matter, it may be well to quote from the report of 1883 the facts as they then existed. The Commissioners then said:

The attention of your Commissioners has been strongly urged to the question of a fishway over the dam of the Ousatic Water Power Company at Birmingham. Section 8 of the charter of the company contains these words:

“And *provided* also, that said corporation shall construct and maintain at said dam, and as a part thereof, suitable and proper fishways to admit the free passage of fish up and down said river above said dam, and to be kept open at such seasons as are necessary and usual for the passage of fish; and if said fishways shall prove inadequate to admit the free passage of shad up and down said river above said dam, said company shall be holden to pay all damages the owners of fisheries above said dam shall sustain by reason of the erection of said dam; and said damages shall be ascertained and fixed in the manner provided in the eleventh section of this act.”

When the dam was in process of erection the company consulted the late Mr. Foster of Maine, at that time the best authority on fishways in this country, and he furnished a plan for a fishway to be built with the dam. This plan was adopted and the fishway was constructed accordingly. It did not prove a success, and the lower portion of it was afterwards modified in accordance with a suggestion of the Fish Commissioners. Even then the shad would not pass through it, and shortly afterwards a great storm occurred which produced such a rise in the river that the whole fishway was carried away, and has never been rebuilt. Many suits for damages were brought against the company, most of which have been settled, though it is understood that some are yet pending. Your Commissioners, after consultation, asked Mr. H. H. Buck of Orland, Maine, the engineer of the Maine Fish Commission, to examine the dam and prepare a plan for a fishway over it.



This was done, and the plan is now in the office of the Commissioners at New Haven. Mr. Shelton, the president of the company, was invited to inspect it, and he did so in the presence of your Commissioners.

Mr. Shelton seemed to be of the opinion that as they had complied with the law in the construction of one fishway, they could not be compelled to build another, and that at present the only redress of those injured is in suits for damages as provided for in Section 8 of the company's charter. Your Commissioners have not as yet taken any further steps in the matter.

This was the condition of things in January, 1884.

The Commissioners, on examining the plan submitted, and discussing the probable cost of the fishway, found many difficulties in the way of its erection, and had grave doubts whether it would be effectual for the passage of shad when completed. In fact the engineer himself, Mr. Buck, confessed that he did not feel at all confident that shad would pass through it. In the meantime, Col. McDonald of the U. S. Fish Commission, had invented a fishway on a new principle, which he claimed would certainly be successful for shad as well as for all other kinds of fishes. Prof. Baird, U. S. Fish Commissioner, was so well satisfied with this fishway that he selected Col. McDonald to make plans for the fishway over the Great Falls of the Potomac, for which Congress appropriated \$50,000. Here is a short account of it taken from *Forest and Stream* of July 10, 1884.

#### THE GREAT FALLS FISHWAY.

The plans for the McDonald fishway at the Great Falls of the Potomac have been accepted by Prof. Baird and transmitted to Maj. Lydecker of the U. S. Engineers, under whose direction the work will be done. This insures more thorough work than if done by contract, and this fishway will give opportunity for careful and critical study of details. The total height to be surmounted is 71.9 feet, this rise being accomplished in a horizontal distance of 2,600 feet, measuring from the crest of the dam to the level of low water. The greater part of the ascent to be overcome

is in the lower part of the section surveyed, the total elevation being accomplished by a succession of abrupt declivities, rising successively to higher levels. It is estimated that it will require for this work 202 cubic yards of cut stone masonry; 90 cubic yards of coping-stone masonry; 479 yards of concrete masonry; 93,600 feet of timber, B. M.; 8,532 lbs. iron; 17,732 short bolts, 2 to 6 in.; 51,664 screws,  $2\frac{1}{2}$  to 9 in.; 1,655 cubic yards of rock excavation; 750 cubic yards of earth excavation; and 110 cords of riprap. The work will soon begin. Col. McDonald expects to sail for Scotland about July 10, the Scotch Commissioners having engaged him to construct a fishway on a salmon river, which he expects to complete in time for the fall run of fish.

One of your Commissioners met Col. McDonald, last May, and discussed the question of a fishway over the Birmingham dam. He said that he had visited the dam, was familiar with its location, and would like to construct a fishway over it at the proper time, but he added: "Do not do anything about it this year. Wait until I come back from Europe and we will see what success we have upon the Potomac."

It would seem that if ever the problem of a successful fishway for shad is to be solved, it cannot be long delayed, and it is understood that if the Ousatonic Water Power Company can be satisfied that a fishway effectual for shad can be erected, the company will build it on the receipt of proper specifications. This would seem to be one of those cases where to "hasten slowly" is the part of wisdom.

Since the above was written, the following communication has been received from Col. McDonald:

U. S. COMMISSION OF FISH AND FISHERIES.  
WASHINGTON, D. C., Jan. 7, 1885.

Dr. W. M. Hudson,

*Commissioner of Fisheries, Hartford, Conn.*

DEAR SIR: I regret to have to inform you that in consequence of technical objections raised by the Secretary of War in regard to the payment of royalty to the McDonald Fishway Company, the work on the construction of the Great Falls Fishway has not yet begun, though I hope shortly to be able to inaugurate it.

In regard to the fishway on the Housatonic river, I should be

disposed to recommend that the matter be held in abeyance until the fishway over the Great Falls has been constructed and tested. I have no doubt that when a fishway, according to my system, is built over the dam at Birmingham on the Housatonic, in accordance with plans and specifications, and of such dimensions as I may find it necessary to prescribe, that it will be entirely successful for the passage of shad. The demonstration in regard to all other fish is now complete, but we have not yet been able to secure a decisive test in regard to the shad, for the reason that the constructions have in general been inadequate for the purpose, the locations have not been most judicious, and, more especially, for the reason that in the case of existing fishways only straggling shad can possibly reach the foot of the fishways; and if any may have gone over the Boshier dam fishway, or over the fishway on the Rappahannock, it would be a mere accident that would reveal their existence above the obstructions, unless in numbers sufficient to attract attention of casual observers.

Very truly yours,

M. McDONALD.

#### SALT-WATER FISHERIES.

The catch of menhaden in the waters of Long Island Sound, early in the season, was quite remarkable, and especially so as the fish were fat and in good condition, which is not generally the case until much later. In the *New Haven Palladium* of May 27, 1884, appeared the following account:

"The foot of Long Island Sound, Watch Hill and Narragansett bays, the Race, and the waters about Montauk Point light-house are just now visited by a tremendous mass of menhaden—a quantity the like of which has not been seen in this region before for very many years, if ever. And this unexpected manna to the hearty fisherman has arrived in these shoal waters phenomenally early in the season. Nothing like it was ever known before. They are at least a month ahead of time, and the water is silvery with them. They have come unexpectedly. Ever since the season opened, the menhaden steamers have been hunting around Sandy Hook and down the Jersey coast for them, and in some cases good catches have been made, but nothing like the hauls



that are pouring in here now. Great 'double-gang' steamers drop off a mile or so from the fish-works, and long before noon are loaded 'scuppers-to' with the flipping morsels of oil. All energies of human and steam power are being bent to make the most of the harvest. This irruption of menhaden may, perhaps, account for the sudden disappearance of the scup or porgie from these waters. Until a few days ago this latter fish was very abundant hereabout, and now there is scarcely a scale to be found. The menhaden are everywhere. Great, smooth, oily patches glistening in the sunlight over schools of them are the tell-tale 'slicks,' which to the eagle-eyed fisherman are sure indications of the presence of his prey, and in shoaler water they play so closely to the surface that their tails and back-fins stick out.

"It is an interesting query, what has brought the menhaden, or whitefish, or bony fish, or porgies, or mossbunkers, or whatever name they go by—for they have a different name in every locality—into these waters so early, in such quantities? In many instances the purse seines of the fishermen have been bursted by the great weight of the catches. The water is literally solid with them. One thing is certain—the profuse theories that have been evolved of late, that the unrestricted catching of these fish diminishes the number and frightens the rest off shore, are almost if not quite exploded. Seldom has there been such a run of scup in New England as this year, and remarkable for their size, and the menhaden now being caught are in good order, large and fat for the season. And here arises another interesting fact: The fish that the steamers have been taking off New York harbor and the Jersey coast this spring have been small and poor, as usual at this time of the year. But this eastern drive of menhaden have the desirable qualities of size and fatness, showing that they come from an entirely different quarter of the southern seas."

The *Hartford Courant* of July 30th contained the following item:

Five fishing vessels hailing from Greenport, L. I., and Tiverton, R. I., came unexpectedly upon a school of menhaden off the Dumplings at the entrance to Newport harbor, Monday. Up to six o'clock that afternoon it was estimated that six thousand barrels had been seined. It is not often that a catch is made so near to the harbor. The haul was the largest of the season.

Many of the residents, hearing of the incident, went out in all kinds of boats to see how the fish were caught and handled.

Both of these accounts serve to show that a great deal has yet to be learned about the habits of fishes. Why should these menhaden have appeared in such quantities so early in the season, and why should they have been in such fine condition at the time of year when they are usually lean and thin? These questions are much easier to ask than to answer. Perhaps at some future time Prof. Baird, by his extensive inquiries in all directions, may be able to solve these problems. Probably the fishes are guided in their wanderings as much by the temperature of the water and the lack or abundance of food as by any other two motives.

In the eastern portion of the Sound are set along the shore, and connected with the islands, a number of fykes, or traps, for which numbers are supplied by the Commissioners as provided by law, on application of the owners. They are generally in operation from April to October, and the report of one of these for 1883, received in May, 1884, is here given as a specimen. Mr. Sawyer explains that what he denominates "mixed" fish are cheap fish, such as herring, flounders, and blackfish.

*Account of Fish caught in Traps set at Dodge's Island, by R. P. Sawyer.*  
1883.

April 23,	2 bbls.	Flat-fish, few Herring.
" 24,	2 bbls.	Flat-fish, few Herring.
" 26,	3 bbls.	Flat-fish and Herring.
" 30,	4 bbls.	Flat-fish, Herring, few Striped Bass.
May 3,	5 bbls.	1 bbl. Porgies, 1 bbl. Bass, 3 bbls. of Flat-fish and Herring.
" 7,	4 bbls.	1 bbl. Porgies, $\frac{1}{2}$ bbl. Bass, $\frac{1}{2}$ bbl. Black-fish, 2 bbls. Flat-fish.
" 9,	2 bbls.	Porgies, Bass, Flat-fish, Herring, and Black-fish.
" 10,	2 bbls.	$\frac{1}{2}$ bbl. Porgies, $\frac{1}{2}$ bbl. Bass, 1 bbl. Flat-fish, few Weak-fish.
" 14,	6 bbls.	2 bbls. Porgies, $1\frac{1}{2}$ bbls. Bass, 1 bbl. Black-fish, Flat-fish, few Weak-fish.
" 15,	3 bbls.	1 bbl. Bass, 1 bbl. Porgies, 1 bbl. Weak-fish and Flat-fish.
" 16,	4 bbls.	2 bbls. Flat-fish and Herring, 1 bbl. Bass and Weak-fish, 1 bbl. Black-fish and Porgies.
" 17,	4 bbls.	The same.

May	21,	12 bbls.	5 bbls. Weak-fish, 2 bbls. Flounders and Black-fish, 2 bbls. Bass, 3 bbls. Flat-fish.
"	22,	6 bbls.	1 bbl. Bass, 2 bbls. Weak-fish, 1 bbl. Flounders and mixed.
"	23,	6 bbls.	1½ bbls. Bass, 3 bbls. Weak-fish, the others mixed.
"	24,	4 bbls.	2 bbls. Weak-fish, 1 bbl. Bass, 1 bbl. mixed.
"	25,	2 bbls.	1 bbl. Weak-fish, few Bass, Flat-fish, and Black-fish.
"	28,	12 bbls.	8 bbls. Weak-fish, 1½ bbls. Bass, 1 bbl. Flounders, 1 bbl. Black-fish, few mixed.
"	29,	8 bbls.	5 bbls. Weak-fish, 1 bbl. Butter-fish, 2 bbls. Flounders, Bass, and Black-fish.
"	30,	3 bbls.	1½ bbls. Weak-fish, ½ bbl. Bass, 1 bbl. Flounders and Black-fish.
"	31,	10 bbls.	7 bbls. Weak-fish, 1 bbl. Bass, 1 bbl. Flounders, 1 bbl. Black-fish.
June	1,	3 bbls.	1½ bbls. Flounders, 1 bbl. Weak-fish, few Bass.
"	4,	5 bbls.	2 bbls. Weak-fish, 2 bbls. Flounders, 1 bbl. mixed, 10,000 Boney-fish in one trap.
"	5,	6 bbls.	2 bbls. Flounders, 1 bbl. Butter-fish, 1½ bbls. Weak-fish, Flat-fish, few Bass.
"	6,	3 bbls.	1 bbl. Weak-fish, 1 bbl. Flounders, 1 bbl. Flat-fish and Bass.
"	7,	1 bbl.	1 bbl. mixed, Weak-fish, Flounders, etc.
"	8,	2 bbls.	1 bbl. Flounders, 1 bbl. mixed.
"	11,	5 bbls.	2 bbls. Flounders, 1 bbl. Weak-fish, 2 bbls. mixed, Butter-fish, etc.
"	13,	3 bbls.	1½ bbls. Flounders, 1 bbl. Weak-fish, few small Blue-fish.
"	14,	5 bbls.	2 bbls. Flounders, 1 bbl. Weak-fish, 2 bbls. mixed and Butter-fish, 1 bbl. Black-fish.
"	15,	4 bbls.	2 bbls. Weak fish, 1 bbl. Flounders, mixed, few Porgies.
"	18,	12 bbls.	10 bbls. Porgies, 2 bbls. Flounders, Weak-fish, etc.
"	19,	3 bbls.	1 bbl. Porgies, 1 bbl. Weak-fish, 1 bbl. Butter-fish, etc.
"	20,	4 bbls.	1 bbl. Porgies, 1 bbl. Weak-fish, 2 bbls. Flounders and Butter-fish, etc.
"	21,	2 bbls.	1 bbl. Flounders, 1 bbl. Butter-fish and Porgies, few Blue-fish.
"	22,	5 bbls.	2 bbls. Porgies, 1 bbl. Weak-fish, 2 bbls. Flounders and mixed.
"	25,	3 bbls.	2 bbls. Flounders, 1 bbl. Weak-fish, Porgies, and Butter-fish.
"	26,	6 bbls.	3 bbls. Weak-fish, 1½ bbls. Flounders, Porgies, and Butter-fish.
"	27,	2 bbls.	1 bbl. Weak-fish, 1 bbl. Flounders, Butter-fish, and Porgies.
"	28,	2 bbls.	1 bbl. Weak-fish and Flounders, 1 bbl. mixed.



July	2,	8 bbls.	1½ bbls. Blue-fish, 2 bbls. Weak-fish, Porgies, and Butter-fish.
"	3,	1 bbl.	Weak-fish, Blue-fish, and Porgies.
"	5,	5 bbls.	2 bbls. Weak-fish, 1 bbl. Blue-fish, Flounders, etc.
"	9,	6 bbls.	3 bbls. Weak-fish and Blue-fish, 2 bbls. Flounders, 1 bbl. mixed.
"	11,	3 bbls.	2 bbls. Weak-fish, 1 bbl. mixed, Blue-fish, Flounders, and Porgies.
"	12,	2 bbls.	Mixed.
"	16,	4 bbls.	2 bbls. Weak-fish, 2 bbls. Flounders and Blue-fish.
"	17,	2 bbls.	Weak-fish, Flounders, etc.
"	19,	2 bbls.	Mixed.
"	23,	3 bbls.	2 bbls. Weak-fish, 1 bbl. Flounders.
"	24,	1 bbl.	Mixed.
"	28,	4 bbls.	1 bbl. Flounders, 2 bbls. Weak-fish and Blue-fish, 1 bbl. Porgies and Butter-fish.
Aug.	28,	1 bbl.	Mixed.
Sept.	3,	1 bbl.	Flounders, Weak-fish, etc.
"	6,	2 bbls.	Weak-fish and Flounders.
"	8,	2 bbls.	Flounders, Blue-fish, Weak-fish, and Butter-fish.
"	11,	1 bbl.	Mixed.
"	13,	7 bbls.	5 bbls. Hickory-fish, Shad or Sea-Shad, 2 bbls. mixed.
"	16,	4 bbls.	2 bbls. Sea-Shad, 2 bbls. Flounders, few Blue-fish.
"	20,	3 bbls.	1 bbl. Bass, 1 bbl. small Mackerel, 1 bbl. Sea-Shad.
"	24,	1 bbl.	Mixed.
"	26,	2 bbls.	Mackerel, Bass, Sea-Shad, and Flounders.
"	28,	2 bbls.	Mackerel, Shad, and Flounders.
Oct.	1,	4 bbls.	2 bbls. Bass and Mackerel, 2 bbls. Shad and small Blue-fish.
"	4,	1 bbl.	Mixed.
"	5,	2 bbls.	Mackerel, Shad, and Flounders.

All favorable localities are occupied by these fykes or traps, and in the aggregate, a large quantity of valuable fish are taken. The hook and line fishermen consider them as fatal to their chances of successful fishing.

The financial statement is hereto appended.

A list of the Fish Commissioners of other states, carefully compiled by *Forest and Stream*, is also inserted for reference.

In the Appendix will be found all the laws relating to fisheries enacted by the last General Assembly.

All of which is respectfully submitted.

W. M. HUDSON,	} <i>Fish</i> <i>Commissioners.</i>
R. G. PIKE,	
JAMES A. BILL,	

## FINANCIAL STATEMENT.

Balance on hand Dec. 1st, 1883,	\$209.68
Annual appropriation,	3,000.00
Amount drawn on annual appropriation for 1884-1885,	8.50
	<u>\$3,218.18</u>

1884.

April 28, Paid H. J. Fenton, 500,000 trout,	\$1,500.00
May 26, Paid H. J. Fenton, 100,000 trout,	300.00
May 26, Paid H. J. Fenton, hatching and distributing 12,000 Michigan trout,	21.17
May 26, Paid H. J. Fenton, hatching and distributing 6,500 California trout,	19.91
July 14, Paid H. J. Fenton, shad hatching,	631.16
Commissioners' pay,	453.00
Commissioners' expenses,	292.94
	<u>\$3,218.18</u>

## FISH COMMISSIONERS.

---

### *Province of New Brunswick.*

W. H. Venning, Inspector of Fisheries, - St. John.

### *Province of Nova Scotia.*

W. H. Rogers, Inspector, - - - Amherst.

### *Province of Prince Edwards Island.*

J. H. Duvar, Inspector, - - - Alberton.

### *Province of British Columbia.*

A. C. Anderson, - - - Victoria.

### *The United States.*

Prof. Spencer F. Baird, - - - Washington, D. C.

### *Alabama.*

Col. D. R. Hundley, - - - Mooresville.

Hon. C. S. G. Doster, - - - Prattville.

### *Arizona.*

Hon. J. J. Gosper, - - - Prescott.

Hon. Richard Rule, - - - Tombstone.

J. H. Tagart, Business Manager, - - Yuma.

### *Arkansas.*

James H. Hornibrook, - - - Little Rock.

H. H. Rottaken, - - - Little Rock.

### *California.*

J. D. Redding, - - - San Francisco.

A. R. Dibble, - - - Grass Valley.

B. H. Buckingham, - - - Washington.



*Colorado.*

Wilson E. Sisty,	-	-	-	Idaho Springs.
------------------	---	---	---	----------------

*Connecticut.*

Dr. W. M. Hudson,	-	-	-	Hartford.
Robert G. Pike,	-	-	-	Middletown.
James A. Bill,	-	-	-	Lyme.

*Delaware.*

Enoch Moore, Jr.,	-	-	-	Wilmington.
-------------------	---	---	---	-------------

*Georgia.*

Hon. J. T. Henderson, Com'r of Agriculture, Atlanta.

Dr. H. H. Cary, Superintendent of Fisheries.

Under the laws of the State these two constitute the Board of Fish Commissioners.

*Illinois.*

N. K. Fairbank, President,	-	-	-	Chicago.
S. P. Bartlett,	-	-	-	Quincy.
S. P. McDole,	-	-	-	Aurora.

*Indiana.*

Calvin Fletcher,	-	-	-	Spencer, Owen Co.
------------------	---	---	---	-------------------

*Iowa.*

A. W. Aldrich,	-	-	-	Anamosa.
A. A. Mosher,	-	-	-	Spirit Lake.

*Kansas.*

W. S. Gile,	-	-	-	Venango.
-------------	---	---	---	----------

*Kentucky.*

Wm. Griffith, President,	-	-	-	Louisville.
P. H. Darby,	-	-	-	Princeton.
John B. Walker,	-	-	-	Madisonville.
Hon. C. J. Walton,	-	-	-	Munfordville.
Hon. J. A. Steele,	-	-	-	Versailles.
W. C. Price,	-	-	-	Danville.
Dr. W. Van Antwerp,	-	-	-	Mt. Sterling.

Hon. J. M. Chambers,	-	-	Independence, Kenton Co.
A. H. Goble,	-	-	- Catlettsburg.
J. H. Mallory,	-	-	- Bowling Green.

*Maine.*

E. M. Stillwell,	-	-	- Bangor.
Henry O. Stanley,	-	-	- Dixfield.

*Maryland.*

G. W. Delawder,	-	-	- Oakland.
Dr. E. W. Humphries,	-	-	- Salisbury.

*Massachusetts.*

E. A. Brackett,	-	-	- Winchester.
F. W. Putnam,	-	-	- Cambridge.
Edw. H. Lathrop,	-	-	- Springfield.

*Michigan.*

Dr. J. C. Parker, President,	-	-	- Grand Rapids.
John H. Bissell,	-	-	- Detroit.
Herschel Whitaker,	-	-	- Detroit.

*Minnesota.*

1st District—Daniel Cameron,	-	-	- La Crescent.
2d District—Wm. M. Sweney, M.D.,	-	-	- Red Wing.
3d District—Robt. Ormsby Sweeny, Pres't,	-	-	- St. Paul.

*Missouri.*

John Reid,	-	-	- Lexington.
J. G. W. Steedman, Chairman, 2803 Pine St.,	-	-	- St. Louis.
Dr. J. S. Logan,	-	-	- St. Joseph.

*Nebraska.*

R. R. Livingston,	-	-	- Plattsmouth.
William L. May,	-	-	- Fremont.
B. E. B. Kennedy,	-	-	- Omaha.

*Nevada.*

Hon. Hubb G. Parker,	-	-	- Carson City.
----------------------	---	---	----------------

*New Hampshire.*

Geo. W. Riddle,	-	-	-	Manchester.
Luther Hayes,	-	-	-	South Milton.
Elliott B. Hodge,	-	-	-	Plymouth.

*New Jersey.*

Richard S. Jenkins,	-	-	-	Camden.
William Wright,	-	-	-	Newark.
Frank M. Ward,	-	-	-	Newton.

*New York.*

Hon. R. Barnwell Roosevelt, President,				
76 Chambers St.,	-	-	-	New York.
Gen. Richard U. Sherman, Secretary, New				Hartford, Oneida Co.
Eugene G. Blackford, 809 Bedford Avenue,				Brooklyn.
William H. Bowman,	-	-	-	Rochester.

*North Carolina.*

S. G. Worth,	-	-	-	Raleigh.
--------------	---	---	---	----------

*Ohio.*

Col. L. A. Harris, President,	-	-	-	Cincinnati.
Chas. W. Bond, Treasurer,				Toledo.
George Daniel, Secretary,	-	-	-	Sandusky.

*Oregon.*

A. B. Ferguson,	-	-	-	Astoria.
-----------------	---	---	---	----------

*Pennsylvania.*

John Gay, President,	-	-	-	Greensburg.
James Duffy, Treasurer,	-	-	-	Marietta.
H. H. Derr, Secretary,	-	-	-	Wilkesbarre.
A. M. Spangler, Corresponding Secretary,				Philadelphia.
Arthur Maginnis,	-	-	-	Swiftwater, Monroe Co.
Aug. Duncan,	-	-	-	Chambersburg.

*Rhode Island.*

John H. Barden,	-	-	-	Rockland.
Henry T. Root,	-	-	-	Providence.
Col. Amos Sherman,	-	-	-	Woonsocket.



*South Carolina.*

Hon. A. P. Butler, Com'r of Agriculture, Columbia.

C. S. Huske, Superintendent of Fisheries, Columbia.

These two officers constitute the Fishery Commission.

*Tennessee.*

W. W. McDowell, -	-	-	-	Memphis.
H. H. Sneed, -	-	-	-	Chattanooga.
Edward D. Hicks, -	-	-	-	Nashville.

*Texas.*

John B. Lubbock, -	-	-	-	Austin.
--------------------	---	---	---	---------

*Vermont.*

Hiram A. Cutting, -	-	-	-	Lunenburg.
Herbert Brainerd, -	-	-	-	St. Albans.

*Virginia.*

Col. Marshall McDonald, -	-	-	-	Berryville.
---------------------------	---	---	---	-------------

*Washington Territory.*

Albert B. Stream, -	-	-	-	North Cove.
---------------------	---	---	---	-------------

(Term expired Nov. 9, 1877; no notice of re-appointment.)

*West Virginia.*

H. B. Miller, President, -	-	-	-	Wheeling.
C. S. White, Secretary, -	-	-	-	Romney.
N. M. Lowry, -	-	-	-	Hinton.

*Wisconsin.*

The Governor, *ex-officio*.

Philo Dunning, President, -	-	-	-	Madison.
C. L. Valentine, Secretary and Treasurer,				Janesville.
J. V. Jones, -	-	-	-	Oshkosh.
J. F. Antisdel, -	-	-	-	Milwaukee.
Mark Douglas, -	-	-	-	Melrose.
C. Hutchinson, -	-	-	-	Beetown.

*Wyoming Territory.*

Dr. M. C. Barkwell, Chairman,	-	-	Cheyenne.
Otto Gramm, Secretary,	-	-	Laramie.
N. L. Andrews,	-	-	Buffalo, Johnson Co.
E. W. Bennett,	-	-	Warm Springs, Carbon Co.
P. J. Downs,	-	-	Evanston, Uinta Co.
T. W. Quinn,	-	-	Lander, Sweetwater Co.

## APPENDIX.

---

### CHAPTER XIX.

#### An Act for the Protection of Eels.

*Be it enacted by the Senate and House of Representatives in General Assembly convened:* Any person who shall set or use any eel-pot, trap, net, seine, weir, pound, or other contrivance for the catching of eels, or shall catch or take any eels otherwise than by hook and line, or spear, in any of the waters adjacent to, or within the town of Westbrook, shall be fined not exceeding seven dollars, or be imprisoned not exceeding thirty days, or both.

Approved, March 5, 1884.

### CHAPTER XX.

#### An Act concerning Fisheries.

*Be it enacted by the Senate and House of Representatives in General Assembly convened:* SECTION 1. No person will take any fish from Cherry pond, in the towns of Avon and Canton, except in the months of July and August.

SEC. 2. Any person who shall violate the provisions of this act shall be fined not exceeding twenty-five dollars.

SEC. 3. Prosecutions for violation of this act may be brought by any grand juror or fish warden of either of said towns to any justice of the peace residing therein.

Approved, March 21, 1884.

### CHAPTER XXI.

#### An Act concerning the Taking of Shell-Fish and Eels in Sherwood's Mill Pond.

*Be it enacted by the Senate and House of Representatives in General Assembly convened:* Any person who shall, between sunset and sunrise, take or catch any eels or shell-fish, or collect any shells



from Sherwood's mill pond, or the coves and creeks connected therewith, in the town of Westport, between Gallup's Gap bridge and the dam across the mouth of said pond, south of said bridge, shall be fined not exceeding twenty-five dollars, or imprisoned not exceeding thirty days, or both.

Approved, March 5, 1884.

## CHAPTER XXII.

### An Act amending An Act relating to Fisheries.

*Be it enacted by the Senate and House of Representatives in General Assembly convened:* Section seventeen of article one, part one, chapter four of the general statutes (page 216) is hereby amended so that the same shall read as follows: Every person who shall, between the first day of March and the first day of November, in any year, gather any oysters or oyster shells in or upon any of the flats, creeks, or banks of the river Thames or the Pequonnock river, shall forfeit not less than seven nor more than fifty dollars, half to him who shall prosecute therefor, and half to the town in which the offense is committed, or be imprisoned in the work-house or common jail not exceeding thirty days, or both.

Approved, March 5, 1884.

## CHAPTER XLIII.

### An Act concerning Fishing in Tyler Pond in Goshen.

*Be it enacted by the Senate and House of Representatives in General Assembly convened:* SECTION 1. No person shall take any fish from Tyler pond, in the town of Goshen, between the first day of January and the first day of June.

SEC. 2. Every person who shall violate the provisions of this act shall be fined not more than seven dollars, or imprisoned not more than thirty days, or both.

SEC. 3. So much of section two of chapter seventy-five of the public acts of 1879 (page 426), as relates to fishing in said Tyler pond, is hereby repealed.

Approved, March 20, 1884.

## CHAPTER XLIV.

## An Act Providing for the Propagation of Fish.

*Be it enacted by the Senate and House of Representatives in General Assembly convened:* SECTION 1. The sum of three thousand dollars is hereby appropriated annually for the artificial propagation of fish in the waters of this State, and the Comptroller shall draw his orders on the Treasurer for sums not exceeding said amount, at the request of the Fish Commissioners, and upon their presenting proper vouchers for the same.

SEC. 2. This act shall take effect from its passage.

Approved, March 20, 1884.

## CHAPTER LXI.

## An Act for the Protection of Fish in the Quinnipiac River.

*Be it enacted by the Senate and House of Representatives in General Assembly convened:* SECTION 1. Any person who shall set or keep any nets, weirs, or other contrivances, in the Quinnipiac river below Doolittle's dam, so called, more than two hours on any tide, counting two tides in the river a day, for the purpose of obstructing the passage of fish, shall be punished by a fine of not less than seven nor more than fifty dollars, or by imprisonment in the county jail not exceeding thirty days, or by such fine and imprisonment both; but nothing herein contained shall be construed to prohibit the placing or keeping of nets along the shores of said river in the town of New Haven, provided at least three-fourths of the passage remain unobstructed.

SEC. 2. Chapter eighty-seven of the public acts of 1883 (page 273) is hereby repealed.

Approved, March 26, 1884.

## CHAPTER LXII.

## An Act relating to Fishing in Columbia Reservoir.

*Be it enacted by the Senate and House of Representatives in General Assembly convened:* SECTION 1. No person shall take any fish from Columbia reservoir, in the town of Columbia, before the second day of January, A. D. 1887.

SEC. 2. Any person violating the provisions of this act shall be fined not more than seven dollars.

Approved, March 26, 1884.

## CHAPTER XC.

## An Act regulating Fishing in Certain Waters.

*Be it enacted by the Senate and House of Representatives in General Assembly convened:* SECTION 1. Chapter four of the public acts of 1880 (page 497), relating to the taking of fish from Neversink pond, in the town of Danbury, is hereby repealed.

SEC. 2. So much of section two of chapter seventy-five of the public acts of 1879 (page 426) as relates to fishing in Squantz and Bearss pond, in the town of New Fairfield, is hereby repealed.

SEC. 3. It shall not be lawful for any person to leave any set-lines or nets on or in the waters of any pond in Danbury or New Fairfield, between the hours of six o'clock in the afternoon and six o'clock in the morning of the day following, either with or without a watch or guard over the same.

SEC. 4. Every person who shall violate the preceding section shall be fined not less than five nor more than ten dollars, and prosecution therefor may be heard and determined by a justice of the peace.

Approved, April 2, 1884.

## CHAPTER CI.

## An Act relating to Fisheries.

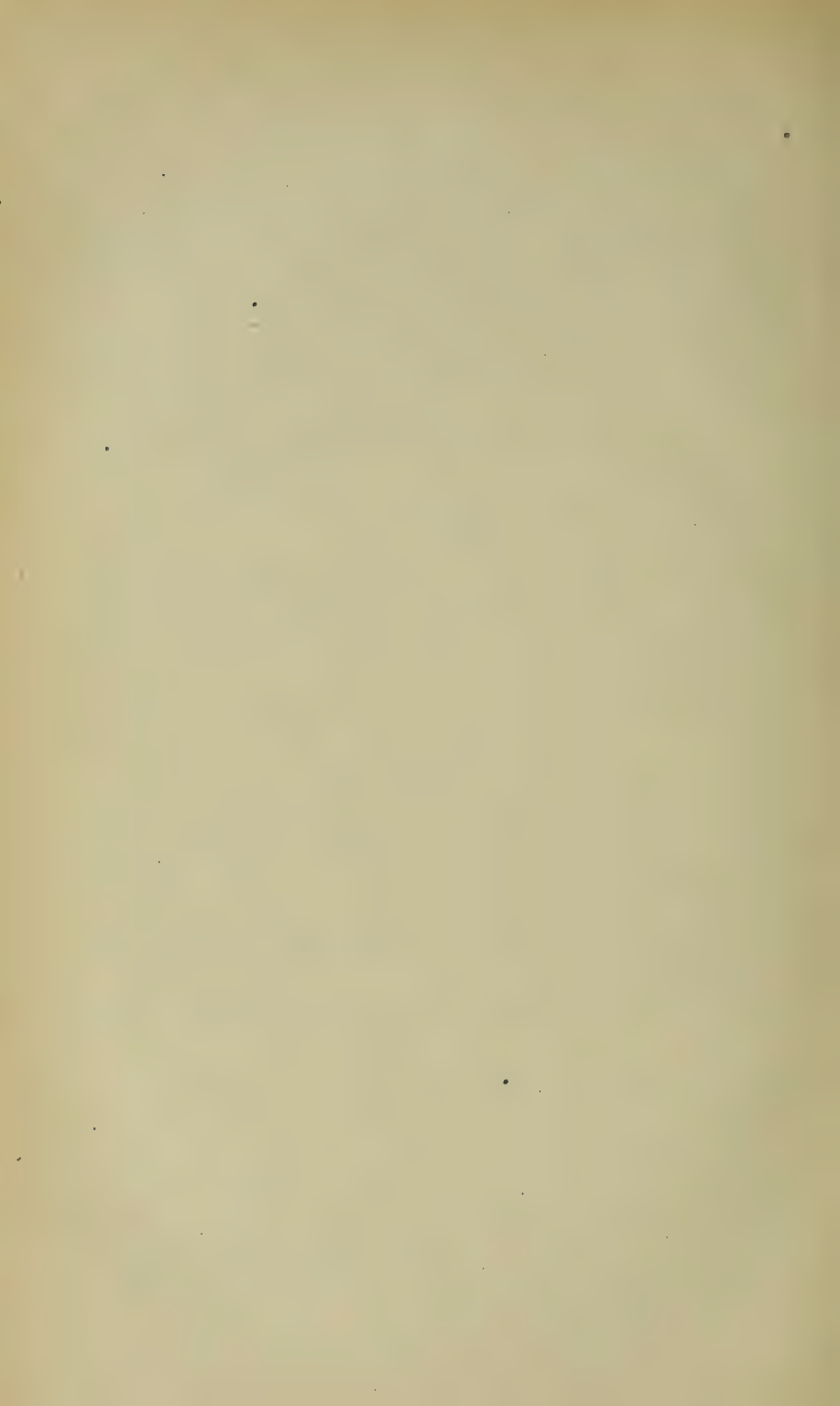
*Be it enacted by the Senate and House of Representatives in General Assembly convened:* SECTION 1. No person shall take any fish from Stratton or Beaver Dam brooks, in the town of Simsbury, before the first day of April, 1886.

SEC. 2. Every person who shall violate the provisions of this act shall be fined not more than seven dollars, or imprisoned not more than thirty days, or both.

SEC. 3. This act shall take effect on the fifteenth day of April, 1884.

Approved, April 4, 1884.





# FOURTH REPORT

OF THE

## Shell Fish Commissioners

OF THE

STATE OF CONNECTICUT,

TO THE

General Assembly, January Session, 1885.



MIDDLETOWN, CONN.:

PELTON & KING, PRINTERS AND BOOKBINDERS.

1885.

## Commissioners of Shell Fisheries.

ROBERT G. PIKE,	-	-	-	-	-	-	Middletown.
WILLIAM M. HUDSON,	-	-	-	-	-	-	Hartford.
JAMES A. BILL,	-	-	-	-	-	-	Lyme.

	CLERK,	
FREDERICK BOTSFORD,	- - - - -	<i>New Haven.</i>
	ENGINEER,	
JAMES P. BOGART,	- - - - -	<i>New Haven.</i>
	FIELD ENGINEER	
DAVID C. SANFORD,	- - - - -	<i>New Haven.</i>
	ASSISTANT ENGINEER,	
ROBERT G. PIKE, JR.,	- - - - -	<i>Middletown.</i>

# STATE OF CONNECTICUT.

---

## REPORT.

---

*To His Excellency the Governor and the General Assembly of the State of Connecticut:*

The Commissioners of Shell Fisheries respectfully present their Fourth Annual Report:

During the past year the Commissioners have found it necessary to devote more time to their official duties than ever before. The rapid growth of the oyster industry since the organization of the Commission has brought to their attention a great variety of novel questions which demanded careful consideration and judicious settlement, most of them being of permanent interest to the oystermen.

The subjects which have principally had their attention are the following:

The arbitration and adjustment of disputes between adjoining owners of oyster grounds;

Conferences with the oystermen, and other investigations, with a view to a just valuation of oyster grounds, in order to secure a satisfactory basis of taxation;

The preparation of the tax list for the year, and attendance at meetings in the towns along the shore for the purpose of hearing complaints as to valuation, and for correcting the list;

The collection of taxes laid the year before;

The examination of applications for the designation of grounds, and the consequent hearings when such applications have been resisted;

The negotiations to secure grounds for signal stations upon the shore;



The collection of information touching the occupation of lots, the buoying and mapping of them according to occupation, and the settlement of many disputes growing out of the same;

The testing of occupations by designations, and in many cases harmonizing differences between a man's occupation and his lawful designation.

These and many other necessary duties preliminary to the great work of making complete maps of the oyster grounds within State jurisdiction have exacted almost the entire time of the Commissioners.

All the work of the Commission has been done with the strictest economy consistent with requisite excellence, and no money has been needlessly spent.

The employees of the Commission have been retained from the beginning, and the results of last year show beyond a question, that in addition to their natural aptitude and scientific knowledge, they have by long experience acquired a facility for doing their work and doing it well, which must hereafter save a considerable expense to the Commission.

Although the past year has been remarkably unfavorable for engineering work on the water, Messrs. Sanford and Pike, Jr., in addition to other work, which will be more particularly reported by Engineer Bogart, have set 413 buoys, surveyed 498 buoys, and determined the location of 12 prominent rocks, trees and drill holes; making in all 923 positions, as against 787 the year before: a gain, notwithstanding adverse weather, of 136 positions. Doubtless the surveying and buoying have been greatly facilitated by the systems of Buoy Books and Field Books planned by the parties named. An ingenious arrangement of charts, too, devised by Engineer Sanford, has resulted in a great saving of time and labor in the work on the water. When the weather was unsuitable for operations outside, the engineers devoted their time to collating and tabulating results, and making preparations for future work. The books thus partially prepared are fully described in the Engineer's Report. The information they afford is fundamental and essential for all future time: and when entirely completed, as they will be soon, the Commissioners will be enabled to proceed with the work imposed upon them of making exact maps of designated grounds, for the State, and for each town interested.

As soon as these data are reported to the office, Engineer Bogart arranges and utilizes them in making maps on a large scale, so that the Commissioners can readily see what each occupant of ground

claims as his property, without regard to his legal title. After considerable labor, which involved resurveys in many instances, a map of lots off New Haven and its neighborhood, showing the occupation of each owner, has been completed. Some of the maps off other towns are also complete, or nearly so, and in the course of the winter all will be in a condition that will enable the Commissioners to proceed with them as they are now proceeding with the New Haven map, which is as follows: Having the map complete before them it is found, as might have been anticipated, that many lots as claimed by the occupants overlap each other; and also when the occupation is compared with the designation, it is found in very many cases that they do not agree. Where the difference between occupation and designation is trifling, no great trouble has resulted. But where the differences are large, the consequences are serious; because to the extent of one's occupation beyond the boundaries of his designation he is a trespasser upon his neighbor: in most cases, perhaps not an intentional, but an accidental, trespasser. If he has cultivated the ground upon the part upon which he has thus innocently intruded, it results in the loss of his stock, which may be of greater or less value according to age and quantity. These discrepancies are the natural fruit of the careless methods of designating grounds which prevailed in all the towns on the shore at the beginning of deep water cultivation. The Commissioners, however, must be governed by the designation in their final mapping; and where there is conflict between occupation and designation, the former must give way.

In pursuance of chap. cxxiv. of the Session Laws of 1882, the Commissioners have settled many of these differences, and the owners have accepted their conclusions in every instance but one. There are many disputes still pending between adjoining owners, the greater part of which, with the aid of the Commissioners, will in all probability be amicably settled. With a few exceptions, the oyster cultivators have manifested a considerate regard for each other's rights, and have made liberal concessions rather than gain a benefit through the excusable error of a neighbor, and also to avoid expensive litigation. It is advisable that all interferences should be adjusted before completing the final mapping. The maps must be of great use to lot owners through all future time, as they will be made with great care, by experts, under the personal supervision of the Commissioners, and there is every reason to believe that they are as accurate and reliable as maps of submarine lots can be made.

## NATURAL BEDS.

During the past year the Commissioners made a thorough investigation of the extent of the Fish Island and the Roton Point natural beds, and they have been carefully surveyed, outlined, and mapped. A particular description of them will be found in the Appendix of this Report. The chief difficulty was in determining the south line of the beds, as there was great conflict of testimony. The Commissioners finally adopted the south line, which is nearly coincident with the north lines of the town designations, which had been previously made on the south side of the beds. The line so chosen was the most southerly line claimed by any of the oystermen who work on the natural beds.

The area of these beds, which are continuous, is three hundred and seven acres.

As this completes the survey and mapping of all the natural beds in the State waters, the Commissioners recommend that a law be passed ratifying and confirming their descriptions. They may all be found particularly set out in this and the previous Reports of the Commissioners.

The following is a complete list of these beds, with their respective areas:

	ACRES.						
Cormell Reef, Natural Bed, - - - - -	-	-	-	-	-	-	15
Portchester, " " - - - - -	-	-	-	-	-	-	218
Great Captains, " " - - - - -	-	-	-	-	-	-	152
Field Point, " " - - - - -	-	-	-	-	-	-	84
Greenwich Point, Natural Bed, - - - - -	-	-	-	-	-	-	403
Fairfield Bar and Fairfield, Natural Bed, - - - - -	-	-	-	-	-	-	1,237
Bridgeport, " " - - - - -	-	-	-	-	-	-	334
Stratford, " " - - - - -	-	-	-	-	-	-	3,055
Fish Island and Roton Point, " " - - - - -	-	-	-	-	-	-	307
Total number of acres, - - - - -	-	-	-	-	-	-	5,805

## DESIGNATIONS.

During the past year, beginning with December 1, 1883, and ending with November 30, 1884, the number of applications for oyster grounds was ninety-two (92); covering an area of four thousand four hundred eighteen and two-tenths ( $4418\frac{2}{10}$ ) acres. The whole area of grounds designated during the year is six thousand five hundred five and sixty-eight one-hundredths ( $6505\frac{68}{100}$ ) acres; which brought

into the State Treasury the sum of seven thousand one hundred and fifty-six dollars and twenty-four cents (\$7,156.24).

Seventy-one (71) applications are pending, waiting for deeds; aggregating three thousand five hundred ninety-three and three-tenths ( $3593\frac{3}{10}$ ) acres.

Fifteen (15) deeds await payment; covering an area of seven thousand and one hundred eight and one tenth ( $7108\frac{1}{10}$ ) acres.

Since June 1, 1881, the total number of applications received is five hundred and seventy-six (576), covering an area of eighty-eight thousand nine hundred sixty-four, and fifteen one-hundredths ( $88,964\frac{15}{100}$ ) acres; of which area forty-five thousand and forty-five, and fifty-eight one-hundredths ( $45,045\frac{58}{100}$ ) acres have been designated; and they have netted to the State the sum of forty-nine thousand five hundred and sixty dollars and three cents (\$49,560.03).

If to the foregoing designations, made by the Commissioners, you add the designations previously made by the towns, the total area designated in State jurisdiction will be found to be  $79,018\frac{9}{10}$  acres, of which 14,066 acres are cultivated, and  $64,952\frac{9}{10}$  are uncultivated.

The total number of taxpaying cultivators in 1882 was 216; in 1883 it was 290; in 1884 it was 385, of whom 16 own each five acres and under; 53 own each between five acres and twenty acres; and 332 own each twenty acres and more.

#### STATE BOUNDARY.

Applications have been made during the past year for designations of grounds at the extreme east end of the State, in close proximity to the territory of Rhode Island. It will be remembered that the Commissioners' line, off Groton and Stonington, extended from the south-eastern extremity of Groton, Long Point, five and four-tenths miles to Stonington or Windmill Point, and thence two and four-tenths miles to Pawcatuck Point, the eastern limit of the State. This line determines the north boundary of the grounds under the Commissioners' jurisdiction; while the division line between New York and Connecticut determines the south boundary under the Commissioners' jurisdiction, as far as said division line extends eastward; but that is only to a point marked No. 3 on the United States Coast Survey map of Fisher's Island Sound,—that is to say, so far as "said States (New York and Connecticut) are coterminous." According to the Coast Survey map, this point is a little north of east from the extreme east end of Fisher's Island, and about south-west from Watch



Hill light-house. But where the dividing line between Connecticut and Rhode Island may be on the water at the east end of the Sound, the Commissioners have been unable to determine. They have met the Fish Commissioners of Rhode Island in conference upon the subject, hoping that there might be found some evidence by which they could be guided. But after diligent inquiry, no one seems to know of any dispute or any agreement about such a line. The thread of Pawcatuck River, which forms the division line between these two States, on the land, for some distance above its mouth, runs north-east and south-west, so that a considerable portion of the territory of Rhode Island lies south-east of Connecticut. From Watch Hill a narrow sand bar extends about one and a half miles to the westward; it then turns at an angle of 90 degrees and runs the same distance a little west of north, terminating at Sandy Point and shutting in or forming Little Narragansett Bay. Sandy Point is a little south of east, from Windmill or Stonington Point, about a mile away; and it is also distant about a mile and a half west from the mouth of Pawcatuck River.

Three laws have been passed establishing the line between Connecticut and Rhode Island, from which the following extracts are taken, being all that has been found pertaining to the southerly end of the line.

The first law was passed May 12, 1703, and may be found in Vol. II. of Private Laws of the State, page 1527. The boundary commenced as follows: "That the middle channel of Paquetuck River, alias Narragansett River, as it extended from Saltwater upwards till it comes to the mouth of Ashaway River, where it falls into said Paquetuck River \* \* \* shall be the fixed and stated line between the said colonies of Connecticut and Rhode Island."

The next law was passed September 27th, 1728, and may be found in the said volume of Private Laws, page 1552. By this law the southerly portion of the boundary line is as follows: "and from said heap of stones, being the corner of Warwick as aforesaid, we extended a line dividend between said colonies unto the mouth of Ashaway, whence it falleth into Paquetuck River, and in said line we made many monuments of stone, &c." But southerly or south-westerly beyond this point, nothing is said about the line.

The third law was passed in 1840 and entitled "A law designating the line between Connecticut and Rhode Island, as surveyed and settled." It may be found in Private laws of the State of Connecticut, Vol. iv., pp. 839 and 840. With reference to the southern end of the

line this law says: "Beginning at a rock near the mouth of Ashawage River, where it empties into Pawcatuck River, and from said rock a straight course northerly to an ancient stone heap at the southeast corner of the town of Voluntown, and from said rock southerly in the same course with the aforesaid line until it strikes the Pawcatuck River, &c," Southerly, beyond this point of intersection of the two rivers, there is nothing in the law touching the boundary line between the two States.

It is by the law of 1728, first quoted, that the southern limit of the boundary line is shown, *i. e.*, "*from Salt water upwards.*" This is probably the only definite point to which any division line has ever been extended, by agreement of the States, into or towards the waters of the Sound.

From a careful inspection of the territory in that neighborhood, the Commissioners of each State reached the conclusion that a line of division upon the waters of the Sound could be satisfactorily determined only upon a conference of legally authorized agents of the two States, and it was agreed to present the subjects to the authorities of their respective States at the earliest opportunity. The lands under water are valuable for oyster cultivation, and the several applications now pending before the Connecticut Commissioners for the designation of lots in Little Narragansett Bay cannot be acted upon until the territorial rights of Connecticut, as against Rhode Island, are settled. It is recommended that a Commission be appointed with authority to adjust and settle the boundary line with a like Commission to be appointed by Rhode Island, subject to ratification by the Legislature of each State.

#### TAXES.

The amount of taxes collected the past year is six thousand four hundred and forty-seven dollars and seven cents (\$6,447.07). There remains uncollected the sum of forty-four dollars and ninety-six cents (\$44.96), comprising bills varying in amount from \$1.10 to \$14.30.

There is reason to believe that most, if not all of this, will be ultimately collected, for the tax remains a lien upon the ground until paid. The tax collected the previous year was \$3,681.47, showing a gain this year of \$2,765.60. This is due partly to an increased valuation of grounds, and partly to a more complete record of ownership. The field engineers, in making surveys, or in buoing lots, take great pains to find out all they can about the lots in the neighborhood of

their work. They make full notes thereof, and report the same to the Engineer and Secretary. This information has proved valuable and has greatly facilitated the work of making complete tax lists. It is believed that few persons have, this year, escaped their liability. When the maps are finally completed it will be next to impossible for any one to avoid his tax.

In making valuation of oyster grounds the Commissioners believe that not a lot has been over-estimated. It is difficult for the uninitiated to appreciate the obstacles that must be overcome before reaching a just conclusion about the value of any sub-marine lot.

Could the waters covering a lot be made to recede, and lay bare the bottom so that one might observe its true suitableness for the cultivation of oysters, their work then would not be half done. The depth of the water, the various currents that flow over the ground, the quantity of food likely to be found there for the growing stock, its exposure to the attacks of stars and other marine enemies—all these elements are necessary to the formation of a correct estimate of value.

As to the natural features of the bottom, however, and as to the depth of the water generally over all oyster lots, the Commissioners have full information. They also have knowledge of the prevailing currents and the general character of a group of lots. The facts upon which this knowledge rests have been accumulating from the beginning of the work of the Commissioners. They have gathered a mass of information in conversation with the oyster growers, not only touching their own lots, but also their neighbors', and they have learned much on the trials of disputes between owners. In a word, it is not presuming to say that the Commissioners have more complete and accurate information, in a general way, about the character and value of oyster grounds throughout the several towns than probably any other three men. Their knowledge is not confined to any particular place, but it extends to all parts of the Sound within their jurisdiction; and they have opportunities to learn which are presented to no other persons. Of course, every oyster cultivator knows more about his own grounds than anybody else, and perhaps he can tell more about the value of his neighbor's grounds better than the Commissioners can. But his information is limited to his immediate neighborhood, and beyond this limit he generally knows no more than a stranger. When the Commissioners, therefore, say that they are best qualified to make a just estimate of the value of grounds within State jurisdiction, it is not in a boastful spirit, but for the best interests of the State.

As the tax lists are returned to the Commissioners' office, they are

arranged in alphabetical order, according to law, with one column for the owner's valuation and another column for the Commissioners'. When the list is complete the Commissioners carefully consider each lot and its valuation, not only with respect to the previous year's estimate, but also with reference to the valuation of neighboring lots in other lists. All the information accumulated in the office, with the personal knowledge of the employees, is brought to bear upon the question of value before it is answered by the Commissioners. After the list is completed notice is given that it is open for inspection, and any one can examine it who desires to do so; and if he feels aggrieved by the Commissioners' decision, he is notified that on a specified day the Commissioners will be at a place named, in or near his town, to hear complaints and correct errors. A patient hearing is given to everyone with his witnesses, at the time and place named; and if good reason is shown for a modification of his list, it is immediately made. In this way the Commissioners serve as a *quasi* Board of Relief.

Their estimates of value have generally been received with approval, and the taxes based thereon have been promptly paid by the great majority of owners. There were some complaints which were presented, not only to the Commissioners personally, but also through the public press, with considerable acrimony; but the Commissioners did not deem it necessary to defend a work which commended itself to all impartial men. Persons who purchase more ground than they can cultivate, who hold large areas for speculative purposes, ought not to be relieved of their fair burden of tax because they reap no immediate benefit from their holdings. And yet this is the class of men, generally, who have been loudest in their complaints. When compared with the valuations of oyster grounds in town jurisdiction and the tax laid thereon by town officers, the State tax laid by the Commissioners seems trifling. Allusion was made last year to the oyster industry of Rhode Island. It was understood, at that time, that there were 11,000 acres under cultivation, but this was a mistake; there were only 1,100 acres. And these pay the State annually \$11,000, while 71,700 acres in Connecticut paid a tax of \$6,447.07 last year, and 56,793 acres a tax of \$3,681.47 the year before. It is true the Rhode Island growers do not own their grounds, while the Connecticut grower pays one dollar and ten cents for a *quasi* fee. But the interest on this slight expense does not materially vary the above comparison. As it is the whole area of designated grounds, cultivated and uncultivated, which last year was 71,700 acres, averaged the



trifling tax of less than 10 cents an acre, this, too, including penalties for delay.

The highest estimate made by the Commissioners last year of any ground was fifty dollars an acre. Reports have come in from trustworthy sources of sales made during the past year at prices varying from one hundred to three hundred dollars per acre. Surely the complaint that the valuations of the Commissioners are excessive is as unreasonable as it is ungracious.

An attempt was made last winter to secure a law for the appointment of three persons to act as a Board of Relief, but it failed. So far as the Commissioners are personally interested, they have not the slightest objection to such a law; but acting for the best interests of the State, they do not hesitate to say that such a board would be a useless expense. If you take three men, one from the west end, one from the east end, and a third from some point between, as has been proposed, what will be the result? Conceding that each may be thoroughly conversant with his own immediate neighborhood, he knows little or nothing of grounds beyond; so that allowing the knowledge of each to be shared by all three, it is still limited, and it constitutes but a small fraction of what they ought to know. Thus half equipped, if they attempt to review the Commissioners' work, what can they do? Each must of necessity adopt the individual judgment of the other as to lots in the latter's neighborhood, with which alone he is familiar,—with a continual temptation before him to favor his neighbors by low estimates; while all three must blindly grope for conclusions in regard to the valuations of lots with which they are not familiar. They can, of course, have hearings and examine witnesses; but if this is done without previous general knowledge of the field, such as the Commissioners have, it will take all their time during the year;—and thus, to say nothing of the great additional expense to the State, you will have a judgment which, from the nature of the case, cannot be more than half informed, overruling the judgment of three men who have made a thorough study of the business and of necessity must know what is just and reasonable better than anyone else. This business differs entirely from Boards of Relief touching lands upon the shore. There they are in full view continually, and their value is fairly known to every man of intelligence in the community; but in respect to lots under water, they are never seen, their character is unknown to all but the owner and his employees and the agents of the Board. The Commissioners have no interest in the grounds, beyond what pertains

to their official duties, and they have no inducement to favor one section above another. If they could see any possible benefit from a Board of Relief, they would gladly advocate a law for its appointment; for it would relieve the Commissioners from some adverse criticism, at least. But as servants of the State, looking to its best interests, the Commissioners cannot recommend it.

#### DUMPING GROUNDS.

Pursuant to chap. cxxxi. of the Session Laws of 1883, the Commissioners have located dumping grounds off New Haven harbor and off Bridgeport harbor, and they have appointed suitable persons to accompany every boat when employed in carrying mud or other material for dumping to such grounds. The result has been that the boat captains have fully respected the law, and no complaints against them have been made by the oystermen since the law went into effect.

#### SIZE OF BUOYS.

During the year the Hartford and New York Transportation Company has lodged complaints with Colonel Walter McFarland, of the United States Engineers, against the use of unnecessarily heavy spars for buoying out grounds. The subject was courteously referred by him to the Commissioners, and after due inquiry and deliberation a rule was established forbidding the use of buoys of larger dimensions than three inches by four inches—or if tapering spars are used they are not to exceed four inches in diameter at a point six feet below the surface of the water. Since this rule was made known, the engineers have strictly adhered to it—and no complaints have since been made by the Transportation Company to the Commissioners.

#### GENERAL REMARKS.

That there is a steady growth in the oyster industry of the State is obvious in many ways: One of the most striking proofs is the rapid increase in the number of steamers employed. There are already in the business forty steamers, with an aggregate carrying capacity of 36,720 bushels, as appears from the following table:

# LIST OF OYSTER STEAMERS.

No.	STEAMER.	CAPACITY.	OWNER.	CAPTAIN.	LOCALITY.
1	Gordon Rowe,	1,300 Bushels.	H. C. Rowe,	H. C. Rowe,	New Haven.
2	William H. Lockwood,	800 "	H. C. Rowe,	Harvey Barnes,	"
3	J. & G. H. Smith,	1,000 "	J. & G. H. Smith,	Wm. H. Davis,	"
4	Smith Bros.,	1,600 "	Smith Bros.,	Marcus P. Smith,	"
5	Molly,	200 "	G. W. Dayton,	G. W. Dayton,	"
6	Emily Mansfield,	800 "	F. Mansfield & Sons,	Wm. F. Mansfield,	"
7	Morgan,	950 "	S. F. Smith & Co.,	Sidney F. Smith,	"
8	Daisy E. Smith,	1,200 "	Jeremiah Smith & Son,	George W. Hitchings,	"
9	The Hoyt Brothers Co.,	2,000 "	The Hoyt Brothers Co.,	C. W. Hoyt,	"
10	Joshua Bedell,	1,000 "	Barnes & Munson,	Henry A. Barnes,	"
11	H. A. Stevens,	275 "	Ludington & Palmer,	Ami P. Ludington,	"
12	Brookhaven,	1,000 "	Lancraft Bros.,	G. E. Lancraft,	"
13	Lizzie E. Woodend,	1,000 "	Wm. Weissbarth,	John Coleman,	"
14	Ivernia,	1,000 "	Merwin & Son,	E. L. Ford,	Milford.
15	Enterprise,	800 "	H. J. Lewis,	George Cleveland,	Bridgeport.
16	Spark,	200 "	H. J. Lewis,	Frank Potter,	"
17	C. S. Conklin,	900 "	H. J. Lewis,	Nelson Wakeley,	"
18	Florence,	1,200 "	Brown & Lewis,	Isaac E. Brown,	"
19	Fred. F. Brown,	700 "	Wheeler Hawley,	Wheeler Hawley,	"
20	Fleet Foot,	500 "			

# LIST OF OYSTER STEAMERS.—Continued.

No.	STEAMER.	CAPACITY.	OWNER.	CAPTAIN.	LOCALITY.
21	Annie,	500 Bushels.	West, Swanberg & Barnes,	Peter West,	Bridgeport.
22	Minnie B.,	800 "	Beardsley & Son,	Frank Hunrison,	"
23	Freddie W. Decker,	1,000 "	Peter Decker,	Peter Decker,	Norwalk.
24	Jupiter,	2,000 "	Wm. H. Rowe,	Wm. H. Rowe,	"
25	Early Bird,	400 "	Cook & Hilton,	Oliver Cook,	"
26	Henry J.,	1,500 "	Theo. S. Loundes,	Theo. S. Loundes,	"
27	Albirta,	900 "	Stanley H. Loundes,	Stanley H. Loundes,	"
28	Mabel L. Stevens,	1,200 "	W. J. Stevens,	W. J. Stevens,	"
29	Sadie,	250 "	W. A. & Thomas Cumming,	Thomas Cumming,	Stamford.
30	Susie,	100 "	W. A. & Thomas Cumming,	H. C. Hatter,	"
31	White Cap,	250 "	George Bufham,	George Bufham,	Portchester.
32	J. P. Thomas,	1,500 "	Thos. Thomas,	John Thomas,	New Haven.
33	Verginius,	1,000 "	Wright & Sons,	— Wright,	"
34	Golden Gale,	500 "	C. J. Nash,	C. J. Nash,	Bridgeport.
35	Falcon,	700 "	H. P. Geib,	A. A. Geib,	Norwalk.
36	H. S. Lockwood,	1,000 "	Frank Lockwood,	Frank Lockwood,	Greenwich.
37	F. C. and A. E. Rowland,	1,800 "	Dexter K. Cole,	Dexter K. Cole,	"
38	Adiline.	400 "	A. Decker & Sons,	A. Decker, Jr.,	Bridgeport.
39	Wm. Alexander,	1,000 "	Zelos Franklin,	—	Milford.
40	J. P. Mersereau,	1,500 "	Daniel Burbanks,	Daniel Burbanks,	Norwalk.
		36,720 Bushels.			



In addition to the above, there are four others in process of construction:

Roland & Tuthill are building at the yard of Richards & Weed, at South Norwalk, a seventy feet steamer, with a capacity of 1,500 bushels.

The Hoyt Brothers, under the direction of Capt. Charles W. Hoyt, are building at Fair Haven a steamer fifty feet in length and sixteen feet beam, with a carrying capacity of 1,200 bushels, to be ready for business April 1st.

Capt. Charles Loundes has plans to build this winter a steamer at Five-Mile River, with a capacity of 1,500 bushels.

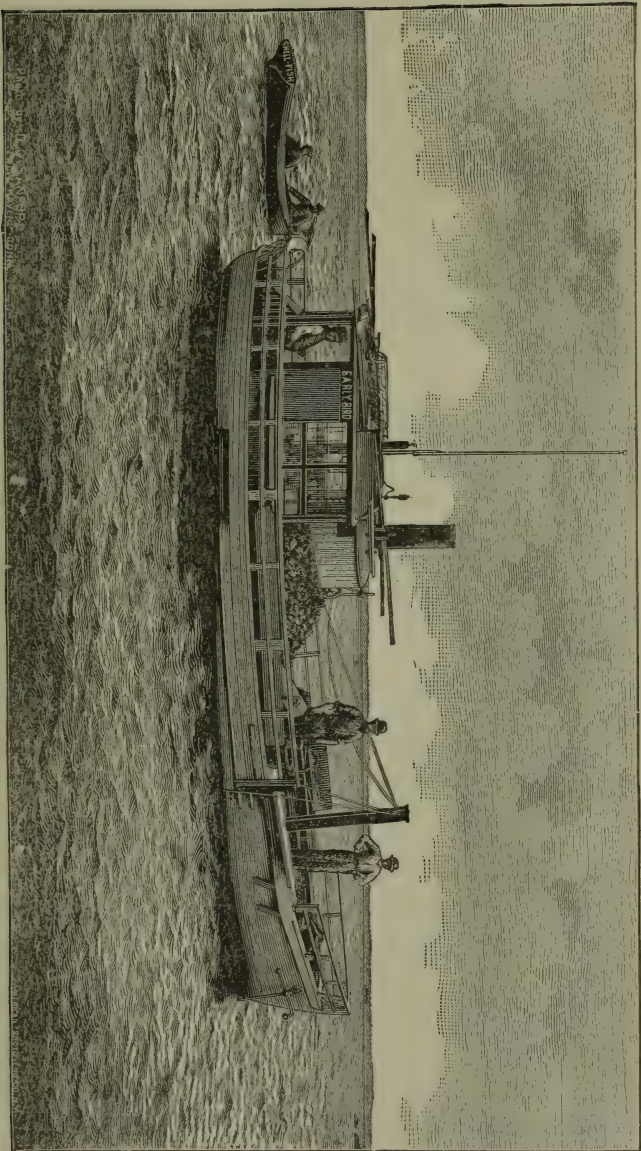
Ludington & Palmer will also build during the winter a steamer of similar capacity.

Thus, by the opening of business in the spring of 1885, there will be forty-four or forty-five oyster steamers employed on the Sound.

Of this large fleet of steamers, the *Early Bird*, owned by Cook & Hilton of Norwalk, was the first used in the oyster business of the State. She was very small, but she has the distinguished credit of being the pioneer in the application of steam to the development of this great industry. This was not quite ten years ago; and it is evident that steamers must ultimately supersede sail vessels, as in most other occupations on the water.

Another proof of the growth of the business is the great increase of shipments of seed and grown stock to neighboring States. The quantity of seed shipped is increasing annually, although the price per bushel is considerably less than formerly. Still, this is probably the largest and most profitable branch of the oyster industry of this State to-day. The distributing of oysters in the shell and in kegs and cans to all parts of the United States is carried on all the year round. With increased freighting facilities and improved preserving appliances, the trade is constantly growing. Probably no stock is produced on the Atlantic coast that reaches the consumer in better condition, after a long journey, than that shipped from Connecticut at any season of the year, even in the hottest summer months.

There is also an increase in the foreign trade, both for seed and full grown stock of medium size. The Hoyt Brothers, one of the largest oyster firms of the State, beginning late in the fall, ship from two hundred to three hundred barrels a week for immediate consumption. They pack 950 four-year-olds, or 1,500 three-year-olds, in a barrel. The freight to England averages about seventy-five cents a barrel. The American oyster is considered the best, although the



**THE EARLY BIRD.**  
THE PIONEER OYSTER STEAMER.

British native, on account of its scarcity and British prejudice, sells for more: the former bringing two cents and the latter four cents each.

About the first of February they begin to ship to England oysters of the same growth as above mentioned, to be planted, for summer use, in water twenty-four feet deep at high tide; but which leaves them bare at low tide. The planting is continued through March and April, to the middle of May. The shipments from here cease about the first of May. These plants serve for summer and early fall use. The English oystermen begin to gather them with forks and dredges at the low spring tides. They have no steamers; all their work is done in small boats. This supply generally lasts until shipments of stock for immediate use begin again in the fall.

The best grounds in use for planting Connecticut stock are at Whitstable, near the mouth of the Thames; Brightingsea, on the south-east coast; Clerethorps, near the Humber, on the south-east coast, and a tract on the east coast of Ireland between Dublin and Belfast. The American oysters thrive well at any of these places, and they are much improved in condition and flavor. They have had some success shelling the ground and catching spat; but the growth is slower than on our shores. The cultivators do not own the grounds. They are leased from the great landholders, and, in addition to rent, the cultivator pays a moderate tax. The grounds are marked out by stakes and buoys, and the oystermen are careful not to trespass upon each other. For example, they have maintained one policeman to watch the grounds at Brightingsea for forty years, and he has never had an occasion to make an arrest for stealing.

The firm above alluded to has shipped the past year ten thousand barrels of oysters. Although the English cultivator plants stock from Germany, Portugal, and France, the American plants are conceded by all to be unquestionably the best. It is a fact that deserves notice, that in freighting oysters to England this firm has never lost a bushel by bad weather, long passage, or otherwise. The steamer Baltic once broke her shaft, and was delayed on her voyage about six weeks; although the oysters from other sections were condemned, those of the above firm arrived in good condition, without a dollar's loss.

Oysters for shipping are packed in flour barrels, very carefully, the hollow shell down; and are pressed down by heavy weights, so that when the barrel is headed the oysters are as compact as a solid mass, and so losing but little, if any, liquor, they can be kept a long time. A barrel contains three bushels, and weighs about 250 pounds. Oysters are admitted there free of duty.



Another Connecticut grower shipped five thousand barrels, valued at twenty thousand dollars, the past year.

Another shipped to California six thousand two hundred and fifty-nine bushels.

Another made foreign shipments aggregating ten thousand dollars.

Another shipped two thousand bushels.

Another shipped twelve hundred barrels.

These are but a few items which the Commissioners have been able to gather from the oystermen.

To obtain more complete statistics of the industry of the State, the Commissioners sent out to the oystermen about three hundred and fifty circulars containing inquiries pertaining to the business. Of these only sixty answers were received—some of which were of no value. The rest, as far as they went, were on some points very instructive. Out of forty steamers only seven were reported—and out of a fleet of probably three hundred sail vessels only forty-three were returned. These reported vessels vary from  $2\frac{1}{2}$  to 100 tons, and show an average of about 18 tons each, with an average capacity of about 50 bushels each, varying from 30 bushels to 2,000 bushels. The number of their employees, including vessel hands, varies, according to the season, from 200 to 300 persons.

The quantity of oysters taken by these owners, with 7 steamers and 43 sail vessels, aggregates 230,000 bushels, varying in price from 40 cents to \$1.35 per bushel.

There seems to be a great disinclination on the part of most of the oystermen to answer any inquiries about the extent of their business. Such questions are looked upon by them as an impertinence. And perhaps it would be an impertinence if the object was not a worthy one. The Commissioners have tried to get the information, but have failed. When the oystermen appreciate the importance of correct statistics about their business they will doubtless answer the Commissioners with more alacrity. It is obvious that the sixty answers, where there ought to be three hundred and fifty, are insufficient data for accurate deductions. To those oyster growers who promptly responded to their inquiries, the Commissioners present their grateful acknowledgments.

The answers in regard to the star fish were interesting and instructive. They show that many cultivators have entirely escaped them, while others, a very large number, have suffered serious loss. It is estimated that over fifty thousand bushels of stars have been caught and destroyed by the oyster growers the past year. In certain neigh-



borhoods the waters teemed with them. Such multitudes had not been seen for many years. It is believed, however, that they will not be so abundant again for some years to come. Still, a constant war must be maintained against them, even in ordinary seasons.

In reply to the question put by the Commissioners, Where do they most abound? the answers were various; but a fair deduction from them shows that they are found at all seasons of the year in all salt waters of the Sound; that they remain on the natural beds and other grounds where the young seed oysters are as long as they find food abundant, and then they attack the neighboring cultivated beds. They are quiet in July and August, when they form into large bunches or rolls for spawning. They are most destructive in the fall, winter and early spring months. They are rarely found on mud bottoms; they seem to prefer hard clay or rocky bottoms, and they gather about the headlands and on lines running off from the headlands into the Sound. The depth of the water seems to make no difference to them. Many insist that it is on natural beds where they most abound; others, with equal positiveness, say that they are no more abundant there than elsewhere. As efforts are continually made by cultivators to keep their own grounds clear, and as no such efforts are made on the natural beds, it would not be strange if they were abundant there. It is also asserted that they breed on neglected grounds, of which there are many hundred acres scattered among cultivated beds. They also breed among inaccessible reefs and rocks, and when large enough begin their depredations upon the nearest beds.

In reply to the Commissioners' question, What would you recommend that the State should do towards their extermination? the answers were various. The principal ones were in substance:

"The State should pay a bounty on every bushel caught on the natural beds." "Steamers should be permitted to dredge on the public beds where the stars abound the most, especially in breeding time." "The time is not far off when the oystermen will reduce them so that they will be little trouble, especially when they get the grounds all planted; but cannot see clearly how the State can do anything without heavy expense, which will finally come back on the oystermen again in the way of taxes." "Let every man keep a good look out for his own grounds; as fast as they gather work on them and clean them out, and let the State clean the natural beds, and all will be well." "Enforce the law against throwing the stars back into the water when once caught." "Let the steamers dredge for oysters on the

beds and catch the stars at the same time." "The oystermen should catch all they can." "Let each and every man take care of his own plantation and look out for his own interests." "Leave the work with the Shell Fish Commissioners." "Let the State pay half the expense of catching them." "Let the State employ steam oyster boats, when they are not busy, and catch them when they are bunched." "Let the State keep two or three steamers to render aid to those who have no steamers." "Sell all the natural beds in small lots to the highest bidder; or else put a high bounty on the stars." "Appoint a special committee of inquiry and report to the Shell Fish Commission or to the Legislature before February 1st, 1885." "Pass a law compelling, under heavy penalties, all parties to catch off the vermin from their unoccupied ground; steamers on the natural beds would not do any good; the stars must be exterminated some other way." "Offer a bounty, make the stars into a fertilizer and sell it to the farmers; it will pay a part, if not all the expense." "The State should do nothing."

In view of these differences of opinion, it is difficult to come to any satisfactory conclusion as to what, if anything, ought to be done by the State.

The Commissioners have discussed the subject in their previous reports—and they have but little to add. Certainly any attempt to introduce steamers on the natural beds would only result in the repetition of those conflicts between the oyster cultivators and the "natural growers" (as they are commonly called), which were so prolonged and so bitter, and which occupied so much of the time and attention of the legislature a few years ago, to no good result. We believe any attempt to introduce steam would be opposed strenuously by a large majority of respectable citizens.

As to those who, for their own reasons, do not choose, for the time being, to cultivate their grounds, any law to compel them to keep watch over their grounds and dredge for stars, would seem unreasonable and oppressive. No one would think it right to compel a farmer to maintain a hunt through his woodland for wolves, or foxes, or other animal marauders, because perchance they may be roaming there, and some time may make incursions against his neighbor's chickens or sheep. To meet such troubles as these the State has never passed coercive laws, but it has in several instances offered bounties for killing such wild animals. It seems, therefore, more in harmony with justice and precedent for the State to offer a small bounty for catching stars in any of the waters under State jurisdiction. It is

believed that under proper restrictions such a bounty would cost the State but little, while it might result in making such inroads upon the pests as may render them comparatively harmless. They are valuable for fertilizing purposes, and may be sold for a sum that would partly pay the bounty. But the Commissioners do not recommend any particular action.

The past season has been highly favorable for spawning; there has been an abundant set, and up to the 1st inst. it is reported as doing well. Thus far the stars do not seem to have been so destructive as the year before, and there is good reason to believe that the young growth will escape serious molestation. It is when their shells are thin and tender that they become an easy prey to these as well as other enemies.

On the 26th day of August, 1884, Mr. James A. Bill succeeded Mr. George N. Woodruff as Fish Commissioner, the term of the latter having expired on that day.

Before closing this Report, the Commissioners cheerfully bear witness to the industry and faithfulness of Secretary Botsford and Engineer Bogart in the discharge of their multifarious duties in the office, and to the energy and success of Engineer Sandford and his assistant, Mr. Pike, Jr., in their toilsome and hazardous work upon the water.

The laws passed at the last session of the Legislature, pertaining to the oyster industry, will be found in the Appendix of this Report.

The financial statement for the year ending November 30, 1884, is as follows :

STATEMENT OF THE FINANCIAL TRANSACTIONS OF THE SHELL FISH  
COMMISSION FOR THE FISCAL YEAR ENDING NOV. 30, 1884.

RECEIPTS.

Total amount received and paid to State Treasurer, - -	\$13,731 84
From the following sources, viz.:	
For deposit fee on applications, - - - -	\$394 04
For deeds delivered, - - - -	6,505 68
For drawing assignments and recording fees of Clerk, - - - -	138 00
For private surveys by Engineering Department,	207 05
For deposit fee on trials of disputed boundaries,	40 00
For taxes collected, - - - -	6,447 07
	<hr/> \$13,731 84

## DISBURSEMENTS.

Total disbursements for Fiscal Year, - - - - -	\$8,350 49
As follows, viz.:	
For salary of Clerk, \$1,383.33; postage, station- ery, gas, etc., \$150.19, - - - - -	\$1,533 52
For rent of office, - - - - -	249 96
For Janitor, - - - - -	39 00
For salaries and incidental expenses of Engineer- ing Department, - - - - -	6,165 78
For amount paid Inspectors of mud dumping, - - -	325 00
	<hr/>
Net expenses of office, - - - - -	\$8,313 26
For cash returned for deposit fee on applica- tions rejected, - - - - -	37 23
	<hr/>
	\$8,350 49

## SUMMARY.

Total receipts, - - - - -	\$13,731 84
Total disbursements, - - - - -	8,350 49
	<hr/>
Excess of receipts over disbursements, - - -	\$5,381 35
	<hr/>
Balance in bank, Dec. 1st, 1883, - - - - -	\$633 80
Drawn from the Treasurer during the year, - - -	8,000 00
	<hr/>
	\$8,633 80
Vouchers returned and approved by Comptroller, - -	8,350 49
	<hr/>
Balance in bank, Dec. 1st, 1884, - - - - -	\$283 31
	<hr/>
Pay of the three Commissioners, - - - - -	\$2,925 00
Expenses of the three Commissioners, - - - - -	2,140 79
	<hr/>
Total, - - - - -	\$5,065 79

All of which is respectfully submitted,

ROBERT G. PIKE,	} Commissioners of
WILLIAM M. HUDSON,	
JAMES A. BILL,	
	Shell Fisheries.



## Engineer's Report.

---

*To the Commissioners of Shell Fisheries of the State of Connecticut:*

GENTLEMEN:—The principal features of the work performed in the Engineering Department during the first four months of the fiscal year were as follows :

The making of a new general map of the oyster grounds of the State, to be used in the Committee room at Hartford, and also a like map for use at your office.

The finishing of the maps which are prepared in the field, during the summer and fall, to check the surveys made during that period. The plotting on the permanent, or working, maps of the office, of surveys made the previous season. The preparation, for the Tax Department, of a series of tracings by towns, on a scale of 1 in 20,000, for assessment purposes. The tracing, by record, of transfers of property. The mapping of applications and drawing descriptions, mathematical in character, for deeds of the same. Preparing a set of tracings for use in connection with the setting of buoys. Taking off angles for probable buoy work during the field season. Making a complete copy, in ink, of the buoy records of the office and indexing the same, and also of other records. The making of computations and tracings, on demand, for private use, and for which a charge was in all cases made. The careful reviewing and comparing of notes and maps. Clerical work in connection with the tax bills.

The basis of the map for use at Hartford was formed by jointing together the three sections of the coast survey chart of Long Island Sound. The maps of the office were reduced, by the use of a pantograph, from their large scale to the small scale of this combined chart and then transferred on to the same. The reductions and transfers were executed with much skill by Mr. D. C. Sanford. The map was then colored and lettered, the State and town lines added, and also various squares giving the size, to scale, of certain areas, as 50 acres, 100 acres.

The companion map at your office is of much use, as it shows at a

glance what parts of the vast area under your jurisdiction yet remain as public domain. Although of small scale, it suffices for receiving all applications for grounds situated off shore.

As fast as applications are received they are mapped on this map and tinted blue and the number of the application inked on it. Should an application be rejected, or cancelled, it is at once erased from this map. Applications which are too small to show distinctly have their numbers conspicuously placed within the limits of the town where the ground is situated. A memorandum is added, and reference to the file of applications is all that is necessary to learn other details concerning such application. Ground which was designated prior to May 1, 1881, is shown by a pink tint.

The tracings for assessment use were made by Mr. Sanford. Also the buoy tracings, and the record searches. He also prepared the books of buoy angles, of which full mention is made hereafter.

The copies of the buoy books were made by Mr. R. G. Pike, Jr., and like the original notes, they present a uniform and handsome appearance. He also assisted for two weeks in the clerical work of the Tax Department, and also made various tracings.

#### THE WORK IN APRIL AND MAY.

Excepting the days occupied in doing buoy work and in repairing and building of signals, the months of April and May were devoted to completing necessary office work for surveys planned for the field season.

#### THE FIELD WORK—SIGNALS.

The twenty-six signals necessary to be maintained for buoy work, extending from Portchester to the Connecticut River, were inspected by Mr. Pike, Jr., during the month of April and early part of May. They were found to be in good condition and required but slight repairs. The practice of whitewashing the signals was abandoned and white paint substituted. The result has been highly satisfactory, the signals gleaming with great distinctness, and thus enabling us to observe on many days when otherwise the signals would have been too dim to warrant safe observing. I would recommend painting the signals at each spring inspection. Also that next spring, the signals that are near dwellings, have the land sides of the tripods boarded up and painted. Thus the same symmetrical and tidy appearance will be presented to the dwellers on the shore as to the observers on the water, and all grounds of offense as to their appearance be removed.

Three new signals were erected. One at Field Point, one at the mouth of Five Mile River, and one at the mouth of Farm River. The first two are poles thirty feet in length, eight inches in diameter at the base and six inches at the top. They stand on ledges and are supported by three iron guys, which are leaded into the rock. A one inch iron rod was set in the rock and the pole well banded at the foot, set on this rod. The guys are also secured at the top by a heavy iron band. These poles are painted white, and in fair weather are readily observed on, at a distance of two and one-half miles.

The signal at Farm River is after the ordinary wooden tripod style.

The position of the Field Point signal was determined in 1882. For the position at Five Mile River, I observed the necessary angles with the theodolite on April 21st and May 14th. The position at Farm River was the result of a traverse line run in 1883.

November 13th, the signal known as "Canal," and situated near the west bank of the Saugatuck River, was reported as not standing. Mr. Sanford states that "one brace was cut in two and a second brace was nearly severed. The cutting was apparently done with a dull hatchet."

Each of your signals has tacked to it a notice, printed on cloth, which reads as follows :

"Notice ! In the interest of all, persons are requested not to disturb this State oyster survey signal."

I would recommend that section 2 of chapter lii. of the Public Acts of 1883, relative to malicious injury to signals, be added to this notice.

The penalty is a fine of not less than seven nor more than one hundred dollars, or by imprisonment, not less than ten nor more than ninety days, or both.

By virtue of the authority vested in you by section 1 of the same act, you have secured leases of a plot of ground surrounding the signal at Kelsey Point, town of Clinton, and at the Highlands, town of Guilford. Concerning the desirability of leases at other points I shall report during the winter.

#### THE BUOY WORK.

The regular work of the party in the field began May 19th, and continued till December 1st ; Messrs. Sanford and Pike, Jr., residing at South Norwalk during said time, excepting the six weeks spent at Stamford. I observed on the work till May 14th. The greater part of the buoy work done the past year was situated west of Bridgeport. But some buoys were set by your party in each of the towns as far

east as Old Saybrook. The number of buoys set was 418. Buoys surveyed 493. Rocks, trees, and drill holes, whose position was determined with the sextant, 12. Total positions determined by sextants, 923.

The noticeable results of these surveys are the opening to cultivation (with assured location) of some thousands of acres of new ground, the completion of the surveys of lots off the town of Greenwich, the mapping of the Roton Point and Fish Island natural beds, the mapping of abandoned but legal claims south of Smith's Island, and the mapping of lots off Stamford and Darien.

The preparations made for buoying out the grounds sold were very satisfactory, and relieved me of much detail work. The plan of arranging the notes for field use was as follows: A tracing on a scale of 1 in 20,000, showing the lots off one or more towns, so that the tracing did not exceed 24 inches in width, thus securing it against being unwieldy in the wind, was made. Beginning with the number 1, the corners of the lots, and intermediate points on their sides where desirable, were numerically numbered with black figures, following each other in some natural order of arrangement. At points where buoys had been previously set or surveyed, their number was placed in red ink. Note books, 4 by  $6\frac{3}{4}$  inches in size, and containing 160 pages, were bought, and the successive pages stamped with large black figures, and corresponding buoy numbers entered in red, so far as they occur. The proper sextant angles were taken from the working maps of the office and duly entered in the note books. These books have printed on their covers, in full and plain letters, with a hand-stamp, the name of the town or towns for which they contain notes.

The tracings are plainly lettered at their ends. They are carried in a tin case which contains a spring roller. As the case is so arranged as to allow the tracings to be readily taken out and put back, one case suffices for each party in the field.

The advantages of this system are obvious. It saves much labor in looking up material. If buoy setting is to be done off any town we have simply to take the book and tracing for that town, and we are sure to have the requisite data with us. As new sales are made, the tracings are added to, corners numbered, and angles for the corners entered in these note, or angle, books.

Every buoy set or surveyed receives a number, and this number always appears in red ink on your maps and tracings. When a location receives a red number it always retains that number, unless there is reason to change the angles.



The practical operation of the notes as prepared for field use is as follows: The corner at which a buoy is desired set, is found on the map, and the black number noted. We have then simply to turn to the page of the note book corresponding to this number, and we find the angles needed. If a buoy has ever been set or surveyed at this point, its number will appear in red ink on the page with the angles. If such number appears it is called off, and the recorder writes against the proper blank space in the buoy record book, the number of the buoy, with the affix "reset."

Whenever a buoy is set or reset, its number is noted in red ink on the proper page of the angle book, together with the day, month and year,—all by numbers. At each buoy which is set by angles deduced from office work, the check angle is observed after the buoy is set, and if different from the angle called for, the reading of the sextant is noted in red ink. If the difference is enough to excite suspicion as to the correctness of the work, an investigation at once takes place.

The buoy record books are  $5\frac{1}{4}$  by  $7\frac{3}{4}$  inches in size, and each admit the notes for fifty-nine buoys. A full double page is allowed for each buoy. The following words are printed on the left hand page, and suitable blank spaces left to be filled out, namely: *Locality: Date: Buoy: Station: Atmosphere: Objects: Angles: ° ' '' : Objects Observed: Time: h. m. Depth: Fath. Feet: Reduced Sounding: Feet: Character of Bottom: Persons Present.*

On the right hand page: *Observers: Sextants: Description of Station: Ranges.*

Each page has twenty-seven blue lines ruled across it. This printed form precludes the chance of forgetting desirable information. It also creates uniformity in the details obtained.

The indexing is done in a book which is 8 by  $10\frac{1}{2}$  inches in size. Each page contains space for twenty-five buoy numbers, and is so ruled as to admit of each buoy being entered by volume and page, five times. Should a sixth entry of the buoy be found necessary, the buoy number would be carried to the rear of the book, and such fact noted. The index is numerical, and each double page presents to the eye successive fifties, instead of successive alphabetical letters. After exhausting the lines, we begin again and run the index down, beginning at 1,300, and so on through the book. Should an inquiry arise as to how often any point has been visited, we have simply to look at the number of the buoy, turn to the index, and the number of entries, by volume and page, shows at a glance what we wish to know and where to find all the details.

## HIGH WATER LINE SURVEYS.

Surveys of the high water line have been made at Farms, Sherwood's, Pine Creek and Colyer's points, for the purpose of determining, and making a proper survey record of, the shore contact and exact point of change in direction of the Commissioners' line of jurisdiction.

## STATISTICS RELATIVE TO APPLICATIONS.

During the year I have drawn descriptions for the deeds of 120 applications. The area deeded and paid for under the same is 6,505.68 acres. This makes a total area of 45,054.58 acres deeded since June 1st, 1881. The applications now pending for which deeds have not been tendered, are 71 in number, and aggregate 3,593.3 acres. Fifteen deeds, having an aggregate area of 7,108.1 acres, are pending. Ninety-two applications, having an aggregate area of 4,418.2 acres, have been received during the year. Total number of applications received is 576. Total area of the same is 88,964.15 acres. Of this area the sale of 33,208.17 acres has not been effected; the principal causes being rejection of applications and cancellation of deeds for non-payment.

## ROTON POINT AND FISH ISLAND NATURAL BEDS.

A full description of the outlines of these beds, as adopted by you, is presented herewith. There was but one idea as to the southern limit of these beds, and it was always defined as being "the old committee line." From the testimony given at various hearings, it would seem that the points towards which this line ran were somewhat different in location at different periods of time. The same general description was always given, but the ends of the line were not specific points in all cases. An exact survey of all of these descriptions would be difficult. It was discovered that the widest interpretation did not interfere with adjoining private beds, the north line of which had been sanctioned by undisturbed occupation for many years.

The line, as adopted, may be described as beginning at the south-west corner of C. W. Bell, and running westerly along the north line of Craw and L'Hommedieu and of John H. Monsell, and continuing until a range of the cupola of Charles Loundes' house on with high-water mark on the east side of Five Mile river is arrived at, and from this point running westerly in the direction of the cupola of H. W. Collender's house, to the south-east corner of Wm. I. Stevens.

## DUMPING GROUND OFF BRIDGEPORT.

In accordance with the intent of chapter cxxvi., section 2, of the Public Acts of 1882, you reserved an area of 239 acres as a dumping ground for all material taken from Bridgeport and Black Rock Harbors, and their vicinity. The northeast corner of this reserve is readily found by the following ranges: 1. Tower of Bridgeport lighthouse, on with middle tree of cluster of three prominent trees on Success Hill. 2. Tower of Penfield Reef lighthouse, on with Congregational spire at Fairfield. The north boundary line runs magnetic west 3,478 feet, to bring Black Rock lighthouse and Penfield Reef beacon in range; thence magnetic south 3,000 feet; thence magnetic east 3,478 feet; thence magnetic north 3,000 feet to the point of beginning. The bearing of the northeast corner from the Bridgeport lighthouse is S. S. W.,  $\frac{1}{2}$  W., and the distance is  $4\frac{1}{16}$  miles. The north and east sides were buoyed out June 20th, 1884.

## EXPENSES ENGINEER DEPARTMENT.

Salaries, - - - - -	\$4,409 47
Pay of men not under salary, - - -	212 28
Traveling expenses party in field, - - -	699 66
Signals, general repairs and inspection, -	221 14
Signals, at Field Point and Five Mile River,	41 15
Signal at mouth of East Haven river, - -	12 69
Steamboat hire, - - - - -	18 00
Tools and field supplies, - - - - -	165 28
Office supplies, - - - - -	100 15
Eighteen feet cedar boat, sail, three pair of oars	
and oarlocks, - - - - -	139 50
Ground rent for signals, - - - - -	23 25
Traveling expenses of Engineer, - - - -	78 38
Postage, - - - - -	17 68
Express charges, - - - - -	20 68
Telegrams, - - - - -	6 47
	<hr/>
	\$6,165 78

## RECEIPTS ENGINEER DEPARTMENT.

For buoy setting and office work, - - \$207 05

The sum of \$214.38 is yet due for buoy setting and office work performed during the year.

The cost value of property on hand belonging to the Engineer Department, as shown by inventory presented herewith, is \$1,427.41.

Respectfully submitted,

JAMES P. BOGART,

*Engineer for Commissioners of Shell Fisheries.*

## Laws Relating to Shell Fisheries.

PASSED AT JANUARY SESSION, 1884.

---

### CHAPTER XXI.

AN ACT CONCERNING THE TAKING OF SHELL FISH AND EELS IN SHERWOOD'S MILL POND.

*Be it enacted by the Senate and House of Representatives in General Assembly convened:*

Any person who shall, between sunset and sunrise, take or catch any eels or shell fish, or collect any shells from Sherwood's mill pond or the coves and creeks connected therewith in the town of Westport, between Gallup's Gap bridge and the dam across the mouth of said pond south of said bridge, shall be fined not exceeding twenty-five dollars, or imprisoned not exceeding thirty days, or both.

Approved March 5, 1884.

### CHAPTER XXII.

AN ACT AMENDING AN ACT RELATING TO FISHERIES.

*Be it enacted by the Senate and House of Representatives in General Assembly convened:*

Section seventeen of article one, part one, chapter four of the general statutes (page 216), is hereby amended so that the same shall read as follows: Every person who shall, between the first day of March and the first day of November in any year, gather any oysters or oyster shells in or upon any of the flats, creeks or banks of the river Thames or the Pequonnock river, shall forfeit not less than seven nor more than fifty dollars, half to him who shall prosecute therefor, and half to the town in which the offence is committed, or be imprisoned in the work-house or common jail not exceeding thirty days, or both.

Approved March 5, 1884.



## CHAPTER CII.

## AN ACT AMENDING AN ACT RELATING TO NAVIGATION.

*Be it enacted by the Senate and House of Representatives in General Assembly convened:*

SECTION 1. Section six of chapter nine, title sixteen of the general statutes (page 254), is hereby amended so that the same shall read as follows: Every person who shall place any material which shall tend to obstruct navigation in navigable waters, shall be fined not less than ten nor more than one hundred dollars; and such material shall be deemed a nuisance, and such person shall be ordered by the court before which the conviction is had to remove such nuisance within thirty days, and, on his failure so to do, any person may remove the same at his expense; but this section shall not apply to oyster beds that have been duly designated and set out for the purpose of planting and cultivating oysters thereon.

SEC. 2. Nothing in this act shall prohibit the filling or wharfing out in such waters, between the shore and the harbor lines established in any harbor under the laws of this State.

Approved April 4, 1884.

## CHAPTER CVII.

## AN ACT FOR THE ENCOURAGEMENT AND PROTECTION OF OYSTER FARMING.

*Be it enacted by the Senate and House of Representatives in General Assembly convened:*

Chapter forty-three of the public acts of 1883 (page 250) is hereby amended so that it shall read as follows: Any person who shall wilfully deposit, or assist in depositing, any star-fish or periwinkle in any of the navigable waters of this State, shall be punished by a fine of not less than fifty dollars, nor more than five hundred dollars, or by imprisonment, not less than three months nor more than one year, or by such fine and imprisonment both.

Approved April 4, 1884.

ANNUAL REPORT  
OF THE  
STATE BOARD OF CHARITIES  
OF  
CONNECTICUT.

---

*Presented to the Governor, January, 1885.*

---

HARTFORD, CONN.:  
PRESS OF THE CASE, LOCKWOOD & BRAINARD COMPANY.  
1885.



## GENERAL STATUTES OF CONNECTICUT.

---

TITLE 3, CHAP. I, PART XIII, PAGE 19, REVISION OF 1875.

### BOARD OF CHARITIES.

SECTION 1. There shall be a board of charities, consisting of three men and two women, appointed by the governor, and removable at his pleasure, who may inspect all incorporated hospitals, and shall inspect all institutions in which persons are detained by compulsion, to ascertain whether their inmates are properly treated, and (except in cases of detention upon legal process) to ascertain whether any have been unjustly placed, or are improperly held therein, and may examine witnesses, and send for persons and papers, and correct any abuses found to exist, in such manner as not to conflict with any personal, corporate, or statutory rights, acting, so far as practicable, through the persons in charge of such institutions, and with a view to sustain and strengthen their rightful authority; and no measures shall be adopted without the assent of the persons so in charge, except at a meeting of the board, at which at least four members shall be present, or by a written order, signed by a majority of the board. An appeal may be taken to the governor from any action of the board, by the persons in charge of such institutions.

1873.  
Appoint-  
ment and  
duties.

Appeals to  
the Govern-  
or.

SEC. 2. Every institution which the board is required to inspect, shall be visited by one or more members frequently, and the state prison, reformatory schools, and insane asylums, as often as once a month, and by at least one member of each sex: no previous notice of such visits shall be given to the persons in charge of the institution visited, and at every such visit, an opportunity shall be offered to each inmate for private conversation with some

To visit  
reformatory  
and other  
institu-  
tions.



member of the board. Any communication directed to any member of said board, by any inmate of said institutions, shall be immediately forwarded to the post-office by the persons in charge, without inspection.

Annual  
report.

SEC. 3. Said board shall make an annual report to the governor, containing such statements and suggestions as it shall think proper.

---

In Chap. II, Title 13, page 173, of the General Statutes of Connecticut, Revision of 1875, it is provided that the board of charities shall receive their necessary expenses, to be paid by the state, as audited by the comptroller.

---

#### AN ACT RELATING TO THE STATE BOARD OF CHARITIES.

Public Acts of 1884, Chap. lxxvii, page 360.

State Board  
of Charities  
how consti-  
tuted.  
Gen. Stat.  
pp. 19, 173.  
Acts 1883,  
p. 306.

SECTION 1. The Board of Charities shall hereafter be known as the State Board of Charities, and shall consist of five persons, of whom three shall be men and two shall be women. The present members of the board of charities shall hold their offices for the term of three years from and after the first day of July, 1884, and any vacancies occurring in their number during said term, by reason of death, disability, resignation, or removal from the state, shall be filled, until the expiration thereof, by appointment by the governor, as heretofore. Upon the expiration of said term two members of the board shall retire each year, in the order of their appointments, except every third year, when one shall retire. Appointments or reappointments to fill vacancies occurring at or after the expiration of said term, from expiration of terms of office, shall be for the term of three years and until successors are appointed and confirmed; and all such vacancies which may occur, from that cause or otherwise, shall be filled by the governor, by and with the advice and consent of the senate. Vacancies occurring during a recess of the legislature shall be filled by the governor until the next regular session thereof.

Vacancies  
how filled.

SEC. 2. The board may inspect all alms-houses, homes for neglected or dependent children, asylums, hospitals, and all provisions or institutions for the care or support of the dependent or criminal classes; and they shall inspect all institutions in which persons are detained by compulsion, to ascertain whether their inmates are properly treated, and, except in cases of detention upon legal process, to ascertain whether any have been unjustly placed, or are improperly held therein, and may examine witnesses, and send for persons and papers, and correct any abuses found to exist, in such manner as not to conflict with any personal, corporate, or statutory rights, acting, so far as practicable, through the persons in charge of such institutions, and with a view to sustain and strengthen their rightful authority; and no measures shall be adopted without the assent of the persons so in charge, except at a meeting of the board, at which at least four members shall be present, or by a written order, signed by a majority of the board. An appeal may be taken to the governor from any action of the board, by the persons in charge of such institutions.

Powers of  
the board.

SEC. 3. The state prison, the state reformatory and industrial schools, and the state insane asylum, shall be visited as often as once a month, and by at least one member of each sex; no previous notice of such visits shall be given to the persons in charge of the institution visited, and at every such visit an opportunity shall be offered to each inmate for private conversation with some member of the board. Any communication directed to said board, or to any member thereof, by any inmate of said institutions, shall be immediately forwarded, postpaid, to the post-office by the persons in charge, without inspection; and any inmate of said institutions may personally deliver to any member of said board, and any member of said board may receive, any communication, without interference or inspection of the person or persons in charge. The inmates of said institutions shall be informed of their rights under this section by the persons in charge, to the satisfaction of said board, or of any visiting member thereof.

Certain  
institutions  
to be visited  
monthly.

Their in-  
mates to  
have oppor-  
tunity of  
private com-  
munication  
with mem-  
bers of the  
board.

Annual  
report of  
the board.

SEC. 4. It shall be the duty of said board to collect information and statistics relating to pauperism, and the administration and operation of the poor laws and state charities, and to embody the same, with such suggestions as they may deem best, in an annual report, which shall be made up to the thirtieth day of November, and shall be presented to the governor on or before the thirty-first day of January in each year.

Office and  
meetings of  
the board.

SEC. 5. The board shall have an office in Hartford, where its records, papers, and books shall be preserved; and shall meet at least once in two months, and as much oftener as it shall deem best, and three members shall constitute a quorum for business. It shall make such by-laws as it shall deem necessary or desirable for the conduct of its business: and shall appoint a secretary or superintendent, prescribe his duties, and fix his compensation, which shall be paid like other salaries. The members and officers of the board, excepting the secretary or superintendent, shall receive no compensation for their services, but their traveling and other necessary expenses shall be paid by the state as audited by the comptroller.

Expenses

Repeal.

SEC. 6. All acts, or parts of acts, inconsistent herewith, are hereby repealed. This act shall take effect from its passage.

Approved, April 2, 1884.

---

#### AN ACT TO PROVIDE HOMES AND CARE FOR DEPENDENT AND NEGLECTED CHILDREN.

Public Acts of 1883, Chapter CXXVI, Page 305.

Public Acts of 1884, Chapter XCII, Page 369.

Temporary  
homes for  
neglected  
children to  
be provided  
in each  
county.

SECTION 1. For the better protection of children between the ages of two and sixteen years, of the classes hereinafter described, to wit: waifs, strays, children who are or may hereafter be in charge of overseers of the poor, children of prisoners, drunkards, or paupers, and others who are or may hereafter be committed to hospitals, almshouses, or workhouses, and all children within said ages, deserted, neglected, cruelly treated, or dependent, there

shall be provided in each county, on or before January 1, 1884, one or more places of refuge, for such children only, to be known as temporary homes. Said homes shall be distant not less than one-half mile from any penal or pauper institution; and no pauper or convict shall be permitted to live or labor therein, and they shall not be used as a permanent provision or residence for any child, but for its temporary protection, for so long a time only as shall be absolutely necessary for the placing of the child in a well-selected family home. Children demented, idiotic, or suffering from incurable or contagious diseases, are not included in the provisions of this act.

SEC. 2. In each county the county commissioners <sup>How man  
aged.</sup> thereof, with one member of the state board of charities and one member of the state board of health, shall constitute a board for the location, organization, management, and general supervision of such temporary home or homes in the county. Said board may use, with their consent, orphan asylums now in operation in any county as temporary homes for that county; and the county commissioners may lease, purchase, hold, sell, and convey real and personal estate for the purposes of such temporary home or homes; and the board may when desirable for economical reasons, and when consistent with the welfare of the children to be provided for, establish such temporary homes in desirable private families: *provided*, that in no instance shall such home be under the same care or management as an almshouse, workhouse, or penal institution. Said board may appoint such superintendents or agents, and may make such rules, regulations, and by-laws as may be necessary or convenient for the order and government of the temporary home and its officers; and they shall appoint a committee of one man or woman in each town of the county, who shall serve without compensation, and who shall have at all times the right to visit and inspect the home or homes of their county, and to suggest to said board such provisions, changes, or additions as they may think desirable; and shall assist said board in the careful selection of family homes for the children in the temporary home or homes, and in the visi-



tation of children when placed in selected families; which visitation shall be made by said board, or by its agents, or through said committees, at least once in every three months; and said board shall remove any child from the family in which it may be placed to a temporary home, or to another family, at their discretion, subject to the intents and purposes of this act.

Children  
not to be  
retained or  
placed in  
almshouses.

SEC. 3. It shall be unlawful for overseers of the poor to place or retain children between the ages of two and sixteen years in almshouses after they shall have been notified by said board that a temporary home in their county is open for the reception of such children; and upon such notice they shall cause all such children in almshouses to be removed to such home; *provided, however,* that if one of the parents of such children who is a person of good moral character shall be committed to the almshouse with, and may there care for them, such children may remain with such parent in the almshouse for a period of not more than thirty days in any one year. The necessary expenses of supporting children in temporary homes or in family homes until they shall reach the age of twelve for girls and fourteen for boys shall be paid by the towns to which they belong at not less than one dollar and fifty cents nor more than two dollars weekly per child; but nothing herein shall be construed as requiring payment for the support of children in private families when in the opinion of said board they can be placed by it in such families to its satisfaction, consistently with the best interests of the child and with the provisions and purposes of this act, without such payment. Overseers of the poor may place children in the temporary home for their county upon such terms as to the time of their stay therein as may be agreed upon by them with said board. Said board may, in their discretion, permit children to be cared for in the temporary home at the expense of private persons. The placing of children with the lowest bidder is hereby prohibited.

Nor be  
committed  
to jail,  
almshouse,  
or work-  
house.

SEC. 4. It shall be unlawful for any court or magistrate to commit any child under sixteen years of age as vicious, truant, or incorrigible, to any jail, almshouse, or

workhouse. Any court of probate, city or police court, or justice of the peace may, upon proceedings instituted in the manner provided for the commitment of children to the industrial schools of the state, or upon petition of the Connecticut Humane Society, commit any child belonging to the classes enumerated in section one of this act to any temporary home that may have been established under this act, and the costs of such commitment and the expense of the support of such children after such commitment shall be paid in the same manner as in other cases referred to in this section.

SEC. 5. A sum not exceeding one thousand dollars in any one county shall be paid towards the establishment and maintenance of the temporary homes provided for in this act by the comptroller, upon the certificate of said board that provision for such home or homes has been made in such county. Appropriation of money.

SEC. 6. To provide for the expense of temporary homes in excess of the sum received under section three of this act, said board shall present annually to the county representatives of each county an estimate of the expense of such homes for the succeeding year; and said representatives may, and in case sufficient funds are not already in the treasury for such maintenance shall, at their annual meeting in each year, lay a county tax for the maintenance of such home or homes in their county. County tax for the purpose.

#### AN ACT RELATING TO OVERSEERS OF THE POOR.

Public Acts of 1884, Chap. lxvi, page 355.

SECTION 1. Overseers of the poor shall keep full and accurate records of the paupers fully supported, the persons relieved and partially supported, and the travelers and vagrants lodged, at the expense of their respective towns, together with the amount paid by them for such support and relief. Records to be kept.

SEC. 2. Said overseers shall make an annual return of the number of such persons supported and relieved, with the cost of such support and relief, to the state board of charities in the month of October. Annual returns to State Board of Charities.

Approved, March 26, 1884.



## MEMBERS OF THE STATE BOARD OF CHARITIES.

[Name of *past* members in Italics, of *present* members in Small Capitals.]

NAMES.	RESIDENCE.	Date of Appointment.	By whom Appointed.	Resigned.
<i>Benjamin Stark,</i>	New London,	Sept. 18, 1873,	Governor Ingersoll,	Resigned March 27, 1879.
<i>Levi Ives,</i>	New Haven,	" " "	" "	Res. accepted May 1, 1875.
<i>Samuel F. Jones,</i>	Hartford,	" " "	" "	Resigned March 27, 1879.
<i>Miss Lucy Alsop,</i>	Middletown,	" " "	" "	Resigned 1878.
<i>Mrs. Marie Pettie,</i>	Meriden,	" " "	" "	Res. accepted Aug. 7, 1874.
<i>H. W. Buell,</i>	Litchfield,	May 1, 1875,	" "	Resigned March 27, 1879.
<i>Mrs. G. A. Hoyt,</i>	Stamford,	March, 18, 1881,	" "	Resigned 1878.
<i>Willis R. Austin,</i>	Norwich,	" " "	Governor Bigelow,	Resigned 1883.
<i>S. Rutledge McNary,</i>	Hartford,	" " "	" "	1883.
<i>Dr. Wm. H. Hotchkiss,</i>	New Haven,	" " "	" "	1883.
<i>Mrs. Augusta C. Pease,</i>	Hartford,	" " "	" "	1882.
<i>Miss Hannah L. Ripley,</i>	Norwich,	" " "	" "	1882.
<i>Mrs. Virginia T. Smith,</i>	Hartford,	July 17, 1882,	" "	" 1882.
* JAMES GALLAGHER,	New Haven,	April 18, 1883,	Governor Waller,	
† HENRY E. BURTON,	Hartford,	" " "	" "	
HARLOW P. HARRIS,	Salisbury,	" " "	" "	
MRS. VIRGINIA T. SMITH,	Hartford,	" " "	" "	
MRS. FRANCIS BACON,	New Haven,	" " "	" "	

\* President.

† Secretary.



# STATE BOARD OF CHARITIES.

---

OFFICE OF THE BOARD,  
HARTFORD, January, 1885.

*To His Excellency the Governor:*

The undersigned members of the State Board of Charities herewith respectfully submit the Annual report of the Board.

JAMES GALLAGHER,  
HENRY E. BURTON,  
HARLOW P. HARRIS,  
MRS. VIRGINIA T. SMITH,  
MRS. FRANCIS BACON.

## ANNUAL REPORT.

---

The State Board of Charities is not referred to in the general statutes, except as set forth in pages 4 to 9 preceding this report.

The board was organized in April last, under the Act entitled "An Act relating to the State Board of Charities," passed January session, 1884, and approved April 2, 1884, which will be found in full on page 6.

The regular meetings of the board are held once in two months, on the first Wednesdays of January, March, May, July, September, and November; and special meetings are called by the secretary upon the order of the President.

The present board, which was appointed in April, 1883, did not receive from previous boards records or memoranda of their doings, or documents, statistics, or information relating to its work. It began, about June 1, 1883, the attempt to gather, by correspondence, personal visitation, and otherwise, such knowledge relating to the administration of the poor laws and to the state charities as it thought necessary to its own efficiency, and useful to the legislature and people of the state; and has continued that attempt during the last year.

### TOWN POOR-HOUSES.

All houses *used* by towns as poor-houses, whether owned by the town, or so used by some arrangement with the private owner, are classed under this name.

Of the one hundred and sixty-seven towns in the state, one hundred and one have poor-houses as above defined; and all of these poor-houses have now been visited.

In addition to the obvious benefits derived, in the way of general observation and knowledge, from such visitations, certain items of particular information have been sought for in each case; and, so far as obtained, they were given, in respect to the poor-houses which had then been visited, in last year's report, and are now embodied, in respect to all the poor-houses in the state, in the following:

### MEMORANDA OF POOR-HOUSE VISITATIONS.

#### HARTFORD COUNTY.

HARTFORD—Visited July 21, '83.

Almshouse owned by town: about 50 acres land attached.

Keeper receives \$1,300 per year: contract does not include out-door relief.

Almshouse receives prisoners: they are not separated from paupers.

Number of inmates at date of visit, 124: men 70, women 45; children under 16—9: boys 4, girls 5.

Number of feeble-minded or idiotic, 8: all adults.

Number of insane, 12: men 4, women 8.

Number of men able to work, 3 to 8: of women 3 to 6.

The 4 boys aged respectively, 3 years, 1 year 6 months, 2 years, 2 years.

The 5 girls aged respectively, 3 years 6 months, 2 years, 1 year, 2 years 6 months, 1 year.

Nationality of the boys: Irish 3, French 1.

Nationality of the girls: American 2, Irish 3.

Five of the children, to wit: boy aged 3 years, boy aged 1 year 6 months, boy aged 2 years, girl aged 3 years 6 months, and girl aged 2 years, in almshouse all their lives: how long the other 3 children there not reported.

The house so divided as to separate the sexes, excepting the children.

BERLIN—Visited August 30, '83.

Almshouse owned by town: about 30 acres land attached.

Keeper receives \$30 per month: contract does not include out-door relief.

Almshouse receives prisoners pending trial; are kept in cells.  
Number of inmates at date of visit, 4: men 2, women 2.  
None of the inmates feeble-minded, idiotic, or insane.  
Number of inmates able to work, 1: a woman.

BRISTOL—Visited August 30, '83.

Almshouse not owned by town.

Keeper receives, per week, \$3 for adults, \$2 for children over 6 years, \$1.50 for children under 6 years; his contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 7: men 2, women 1; children under 16, 4: boys 3, girls 1.

Number of feeble-minded or idiotic, 1: the woman; none insane.

The men and women able to work.

The 3 boys aged respectively 6, 5, and 3 years, the girl aged 10 years.

Nationality of the boys: Irish 2, American 1.

Nationality of the girl: Irish.

The girl, the boy of 6, and the boy of 5, in the almshouse 4 years; the other boy 1 year.

CANTON—Visited September 20, '83.

Almshouse not owned by town.

Keeper receives \$1,400 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 4: women 2, men 1; children under 16, 1: a boy.

Feeble-minded, idiotic, or insane, none.

All the inmates able to work more or less.

The boy aged 12: colored: 3 years in almshouse.

EAST HARTFORD—Visited July 11, '83.

Almshouse owned by town: about 25 acres land attached.

Keeper receives \$400 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.



Number of inmates at date of visit, 9: men 6, women 2; children under 16, 1: a boy.

Feeble-minded or idiotic none.

Number of insane, 2: 1 man, 1 woman.

The boy aged 8 years: French; mother insane, also in almshouse.

EAST WINDSOR—Visited July 11, '83.

Almshouse owned by town: about 60 acres land attached.

Keeper receives \$475 per year: contract does not include outdoor relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 11: men 7, women 4.

Number of feeble-minded or idiotic, 2: 1 man, 1 woman.

Number of insane, 1: a man.

ENFIELD—Visited July 11, '83.

Almshouse owned by town: about 80 acres land attached.

Keeper receives \$450 per year: contract does not include outdoor relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 15: men 8, women 6; children under 16, 1: a girl.

Number of feeble-minded or idiotic, 5: 2 men, 2 women, 1 girl; insane, none.

Number able to work, 7: men 4, women 3.

The girl aged 11: colored; 8 years in almshouse; though not very bright, is useful.

FARMINGTON—Visited October 4, '83.

Almshouse owned by town: about 50 acres land attached.

Keeper receives \$575 per year: contract does not include outdoor relief.

Almshouse receives prisoners: they are not separated from paupers.

Number of inmates at date of visit, 9: men 3, women 4: children under 16, boys 1, girls 1.

Number of feeble-minded or idiotic, 2: men 1, women 1.

Number of insane, 1: a woman.

Number of inmates able to work, 5: men 2, women 2, boy 1.

The boy aged 15, American, born in almshouse, and there most of his life; the girl aged 8, American, length of time in almshouse not reported.

GLASTONBURY—Visited September 5, '83.

Almshouse not owned by town.

Keeper receives \$1,300 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 9: men 3, women 4; children under 16, boys 1, girls 1.

Number of feeble-minded or idiotic, 1: a woman; insane—none.

Number of inmates able to work, 3: men 2, women 1.

The children are brother and sister; aged respectively, 9 and 7; parentage Scotch-American; all their lives in almshouse.

GRANBY—Visited November 6, '83.

Almshouse not owned by town.

Keeper receives \$2.25 per week for each pauper: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 5: men 4, women 1.

Feeble-minded or idiotic, none.

Number of insane, 3: men.

Number able to work, 1: a man.

MANCHESTER—Visited September 4, '83.

Almshouse owned by town: about 160 acres land attached.

Keeper receives \$450 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 20: men 8, women 9; children under 16, boys 2, girls 1.

Number of feeble minded or idiotic, 1: a man.

Number of insane, 4: all women.

Number of men able to work, 2: of women, 8.

The 2 boys aged respectively 10 years, and 2 years: French and

English respectively; the former 5 years in almshouse; the latter about a month. The girl aged 4 years, English, about a month in almshouse.

NEW BRITAIN—Visited August 30, '83.

Almshouse owned by town: about 50 acres land attached.

Keeper receives \$400 per year: contract does not include outdoor relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 22: men 8, women 10; children under 16, 4: boys 3, girls 1.

Number of feeble-minded or idiotic, 3: men 1, women 2.

Number of insane, 3: women 2, men 1.

Number of inmates able to work, 10: 5 men, 5 women.

The three boys aged respectively, 9, 9, and 6 years; in almshouse respectively, 3 years, 6 weeks, and 6 years; all of Irish parentage. The girl aged 12 years: Irish; 6 weeks in almshouse.

SIMSBURY—Visited June 20, '83.

Almshouse owned by town: about 125 acres land attached.

Keeper receives \$475 per year: contract does not include outdoor relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 9: men 4, women 3; children under 16, 2: 1 boy, 1 girl.

Number of feeble-minded or idiotic, 2: a woman and a boy; insane, none.

Number able to work, 3: all women.

The boy aged 15 years, Irish: 4 years in almshouse; an idiot.

The girl aged 10 months, American; born in the almshouse.

[The poorhouse and town farm were given to the town by Amos R. Eno, Esq, formerly of Simsbury, now of New York, in the fall of 1882.]

SOUTHINGTON—Visited August 30, '83.

Almshouse owned by town: about 50 acres land attached.

Keeper receives \$400 per year: contract does not include outdoor relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 8: men 4, women 4.

Number of feeble-minded or idiotic, 2: 1 man, 1 woman.

Number of insane, 1: a woman.

All the inmates able to work.

SOUTH WINDSOR—Visited July 11, '83.

Almshouse owned by town: about 17 acres land attached.

Keeper receives \$35 per month: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 13: men 8, women 2; children under 16, 3: boy 1, girls 2.

Feeble-minded, idiotic, or insane, none.

The boy aged 6 years, American.

The girls aged respectively, 9 and 5 years; both illegitimate; one white, the other part colored; the mother white, also in almshouse.

SUFFIELD—Visited July 11, '83.

Almshouse not owned by town.

Keeper receives \$1,200 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 4: 3 men, 1 boy.

Feeble-minded, idiotic, or insane, none.

The boy aged about 7 years; nationality or length of time in almshouse not reported.

WETHERSFIELD—Visited July 31, '83.

Almshouse owned by town: about 55 acres land attached.

Keeper receives \$325 per year: contract does not include out-door relief.

Almshouse receives prisoners: they are separated from the paupers.

Number of inmates at date of visit, 5: men 3, women 1; children under 16, 1: a boy.

Feeble-minded, idiotic, or insane, none.

Number of inmates able to work, 4: men 2, women 2.

The boy aged 6 years: colored; 3 years in almshouse.



## WINDSOR—Visited July 11, '83.

Almshouse not owned by town.

Keeper receives \$1,000 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 5: men 4, women 1.

Feeble-minded, idiotic, or insane, none.

## NEW HAVEN COUNTY.

## NEW HAVEN—Visited July 28, '83.

Almshouse owned by town: about 325 acres land attached.

Keeper receives \$1,200 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 216: men 96, women 93; children under 16, 27: boys 12, girls 15.

Number of feeble-minded or idiotic, 23: men 10, women 13.

Number of insane, 2: both men.

The 12 boys aged respectively, 2 years 6 months, 9 months, 2 years, 3 months, 6 months, 3 years, 8 months, 3 years, 7 months, 10 months, 4 years, 11 years.

The 15 girls aged respectively, 4 months, 1 year 6 months, 7 months, 4 months, 6 weeks, 4 years 6 months, 1 year 6 months, 4 years, 8 months, 3 years, 2 months, 1 year 6 months, 8 months, 2 years, 3 years.

Nationality of the boys: Irish, 10; German, 1; American, 1.

Nationality of the girls: Irish, 9; Colored, 2; German, 4.

Seven of the boys in the almshouse all their lives: the remaining five, aged respectively 6 months, 8 months, 7 months, 10 months, and 11 years; there respectively, 4 months, 5 months, 6 months, 8 months, and 1 month.

Eight of the girls in the almshouse all their lives: the remaining seven, aged respectively, 1 year 6 months, 4 years 6 months, 1 year 6 months, 4 years, 3 years, 8 months, and 3 years; there respectively, 7 months, 6 months, 1 month, 6 months, 6 months, 4 months, and 6 months.

The house so divided as to separate the sexes.

## BRANFORD—Visited November 3, '83.

Almshouse owned by town: about 8 acres land attached.

Keeper receives \$500 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 5: men 2, women 3.

Feeble-minded, idiotic, or insane, none.

Able to work, none.

## CHESHIRE—Visited November 6, '83.

Almshouse owned by town: about 80 acres land attached.

Keeper receives \$2.00 per week for each pauper: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 8: 5 men, 1 woman; children under 16, 2; both boys.

Feeble-minded, idiotic, or insane, none.

Number able to work: 3 men.

The boys aged 7 years and 5 years respectively: the former English, and 6 years in almshouse; the latter American, and 5 years in almshouse.

## DERBY—Visited November 2, '83.

Almshouse owned by town: about 40 acres land attached.

Keeper receives \$700 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 19: men 7, women 9; children under 16, 3: boys.

Number of feeble-minded or idiotic, 3: men 1, women 2.

Number of insane, 2: women.

Number of men able to work, 2.

Number of women able to work, 2.

The 3 boys, aged 5 years, 3 years, and 1 year 4 months, respectively, all Irish; in the almshouse 4 years 6 months, 2 months, and 2 months, respectively.

## GUILFORD—Visited November 3, '83.

Almshouse owned by town: about  $\frac{1}{2}$  acre land attached.

Keeper receives \$75 per year: contract does not include out-door relief.

Almshouse receives prisoners; they are not separated from the paupers.

Number of inmates at date of visit, 6: men 5, women 1.

Feeble-minded or idiotic, none.

Number of insane, 1: a man.

Number able to work, 1: a man.

HAMDEN—Visited November 2, '83.

Almshouse owned by town: about 100 acres of land attached.

Keeper receives \$450: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 8: men 4, women 4.

Feeble-minded or idiotic, none.

Number of insane, 1: a woman.

Number of men able to work, 4.

Number of women able to work, 3.

MERIDEN—Visited July 28, '83.

Almshouse owned by town: about 60 acres land attached.

Keeper receives \$800 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 42: men 12, women 19; children under 16: boys 3, girls 8.

Number of feeble-minded or idiotic, 1: a man.

Number of insane, 17: men 5, women 12; average age of the insane, about 45 years; 11 of the 17 have been in the General Hospital for the Insane, to wit: 3 men and 8 women, but have been removed.

Number of men able to work, 5.

Number of women able to work, 4.

The 3 boys, aged respectively: 5 years, 3 years, 12 years.

The 8 girls, aged respectively: 5 years, 11 years, 5 years, 1 year, 12 years, 9 years, 6 years, 2 weeks.

Nationality of the boys: American 1, German 2.

Nationality of the girls: Irish 2, American 2, German 2, Swede 1, colored 1.

The 3 boys in almshouse: 5 years, 5 months, and 1 year, respectively.

The 8 girls in almshouse: 18 months, 18 months, 5 years, 5 months, 8 years, 5 years, 5 years, and 2 weeks, respectively.

*There were 22 children in this almshouse in the spring of 1883.*

NAUGATUCK—Visited November 7, '83.

Almshouse owned by town: about 100 acres land attached.

Keeper receives \$400 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 6: men 2, women 3; children under 16, 1 girl.

Feeble-minded, idiotic, or insane, none.

Number able to work, 2: men 1, women 1.

The girl, aged 10 months, German; 3 months in almshouse.

OXFORD—Visited November 2, '83.

Almshouse owned by town: about 140 acres land attached.

Keeper receives \$440 per year.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 4: men 3, women 1.

Feeble-minded or idiotic, none.

Number of insane, 1: a woman.

Number of men able to work, 2.

Number of women able to work, 1.

SOUTHBURY—Visited December 6, '83.

Almshouse discontinued November 1.

WALLINGFORD—Visited November 3, '83.

Almshouse not owned by town.

Keeper receives \$3 per week for each pauper: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 2: both men.

Number of feeble-minded or idiotic, 1; insane, none.

Number able to work, 1.



## WATERBURY—Visited November 5, '83.

Almshouse owned by town: about 300 acres land attached.

Keeper receives \$800 per year: contract does not include out-door relief.

Almshouse receives prisoners; they are not separated from the paupers.

Number of inmates at date of visit, 65: men 31, women 22; children under 16: boys 5, girls 7.

Number of feeble-minded or idiotic, 5: men 2, women 3.

Number of insane 9: men 3, women 6.

Number able to work, 12: men 5, women 7.

The girls, aged respectively 14 years, 12 years, 8 years, 6 years, 2 years, 1 year, 5 years.

The boys aged respectively 6 months, 2 years, 2 weeks, 6 weeks, 8 years.

## NEW LONDON COUNTY.

## NEW LONDON—Visited November 22, '83.

Almshouse owned by town: about 25 acres land attached.

Keeper receives \$600 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 26: men 12, women 7; children under 16: boys 4, girls 3.

Number of feeble-minded or idiotic, 3: men 2, women 1.

Number of insane, 2: both women.

Number able to work, 18: men 12, women 6.

The boys, aged respectively, 5 years, 3 years, 3 years, and 9 months.

The girls, aged respectively 8 years, 7 years, and 1 year 7 months.

The 4 boys and first 2 girls are German, and 6 months in almshouse.

The last girl is American; time in almshouse not reported.

## NORWICH—Visited September 24, '83.

Almshouse owned by town: about 25 acres land attached.

Keeper receives —: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 51: men 27, women 20; children under 16: 4.

Number of insane, 9: men 2, women 7.

Of the children, two are boys: both American, aged respectively, 12 years, and 14 years; and two infants, aged respectively, 6 months, and 1 year: both Irish.

COLCHESTER—Visited February 2, '85.

Almshouse owned by town: 35 acres land attached.

Keeper has \$300 per year: no out-door relief.

Almshouse receives prisoners: are separated from the paupers.

Number of inmates at date of visit, 16: men 9, women 7, children, none.

Feeble-minded, idiotic, or insane—none.

Paupers able to work, 5: men 3, women 2; men employed in out-door work, women in house.

GRISWOLD—Visited December 11, '84.

Almshouse owned by town: about 130 acres land attached.

Keeper's contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 9: men 6, women 3.

Number of feeble-minded or idiotic, 2: both men.

Number of insane, 1: a woman.

Number able to work, 6: men 5, women 1.

GROTON—Visited November 22, '83.

Almshouse not owned by town.

Keeper receives \$2,800 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 4: men 1, women 2; children under 16, 1: a boy.

None able to work.

The boy, aged 14 years, American; 5 years in almshouse.

LEBANON—Visited December 11, '84.

Almshouse not owned by town.

Keeper receives \$900 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 3: men 1, women 2.

Number of feeble-minded and idiotic, 1: a woman.

Insane, 1: a man.

Number able to work, 3; men 1: women 2.

LEDYARD—Visited November 19, '83.

Almshouse not owned by town.

Keeper receives \$940 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 9: men 2, women 7.

Number of feeble-minded or idiotic, 2: men 1, women 1.

Number of insane, 4: men 1, women 3.

Number able to work, 3: men 1, women 2.

MONTVILLE—Visited November 20, '83.

Almshouse owned by town: about 100 acres land attached.

Keeper receives \$1,600 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 11: men 2, women 5; children under 16, 4: boys 3, girls 1.

Number of feeble-minded or idiotic, 2: 1 man, 1 woman.

Insane, none.

Number able to work, 6: men 2, women 4.

The 3 boys, aged respectively, 4 years, 2 years, and 2 years; Scotch 2, American 1; in almshouse 5 months, 5 months, and 2 months, respectively.

The girl, aged 3 years, American; 3 years in almshouse.

OLD LYME—Visited February 2, '85.

Almshouse owned by town: 3 acres land attached.

Keeper has house rent free, and \$3 per week for 2 of the inmates, and \$2.50 per week for 1. No out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 3: men 1, women 2, children, none.

Feeble-minded or idiotic, 1—a woman; insane, none.

None of the inmates able to work.

## PRESTON—Visited November 19, '83.

Almshouse not owned by town.

Keeper receives \$900 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 4: men 3, women 1.

Number of feeble-minded or idiotic, 1: a man; insane, none.

Number able to work, 2: 1 man, 1 woman.

## SALEM—Visited November 20, '83.

Almshouse not owned by town.

Keeper receives, per week, \$2.00 for adults, \$1.50 for children: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 2: 1 woman, 1 boy under 16.

The woman feeble-minded or idiotic: insane, none.

The boy, aged 3 years, Scotch; 8 months in almshouse.

## STONINGTON—Visited November 23, '83.

Almshouse owned by town: about 140 acres land attached.

Keeper has use of farm, bedding, clothing, and medical attendance furnished, and receives \$1.25 per week for each pauper.

Almshouse receives prisoners: they are not separated from paupers.

Number of inmates at date of visit, 17: men 11, women 3; children under 16, 3: boys 2, girls 1.

Number of feeble-minded or idiotic, 2: both men.

Number of insane, 3: all men.

Number able to work, 2—men.

The girl, aged 8 years, American; 8 years in almshouse.

The boys aged respectively 3 years and 2 years; the former Irish, and 3 years in almshouse; the latter colored, how long in almshouse not reported.

## WATERFORD—Visited November 21, '83.

Almshouse owned by town: about 200 acres land attached.

Keeper receives \$250 per year: contract does not include out-door relief.

Almshouse receives prisoners: they are separated from the paupers.



Number of inmates at date of visit, 7: men 2, women 4; children under 16, 1—a boy.

Number of feeble-minded or idiotic, 3: 2 men, 1 woman.

Number of insane, 1: a woman.

Number able to work, 1: a man.

The boy aged 9 years, American; 1 year 6 months in almshouse.

## FAIRFIELD COUNTY.

BRIDGEPORT—Visited August 9, '83.

Almshouse owned by town: about 45 acres land attached.

Keeper receives \$45 per month: contract does not include out-door relief.

There is a contractor for both in-door and out-door relief in Bridgeport, for \$16,500 per year, who employs the keeper.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 76: men 40, women 21; children under 16, boys 8, girls 7.

Number of feeble-minded or idiotic, 14: men 7, women 7; insane, none.

Number of men able to work, 18.

Number of women able to work, 8.

The 8 boys aged respectively, 6 years, 10 years, 9 years, 7 years, 5 years, 1 year 3 months, 1 year 4 months, 12 years.

The 7 girls aged respectively, 11 years, 8 years, 3 years, 8 years, 5 years, 1 year 6 months, 4 years.

Nationality of the boys: Irish 5; Irish-American, 3.

Nationality of the girls: American, 1; Irish, 5; Irish-American, 1.

The 8 boys in almshouse, respectively, 1 year, 1 year, 1 year *this time*, 1 year *this time*, 6 months, 6 months, 1 year 4 months, 2 years.

The 7 girls in almshouse, respectively, 6 years, 2 years, 3 years, 1 year, 1 year, 1 year, 6 months.

DANBURY—Visited August 20, '83.

Almshouse owned by town: about 90 acres land attached.

Keeper receives \$600 per year: contract includes some out-door relief.

Almshouse receives prisoners: they are not separated from the paupers.

Number of inmates at date of visit, 30: men 16, women 11; children under 16, boys 1, girls 2.

Number of feeble-minded or idiotic, 1: a woman.

Number of insane, 2: both women.

Number able to work, 23: men 14, women 9.

The two girls aged respectively 6 years, and 13 months: both American; former in almshouse 2 years; latter from birth.

The boy aged 8 years, colored: 5 years in almshouse.

BROOKFIELD—Visited February 4, '85.

Almshouse not owned by town.

Keeper receives \$800 a year, and has a three years' contract at that rate; contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 6: men 3, women 3; no children.

Feeble-minded, idiotic, or insane, none.

Able to work, none.

EASTON—Visited August 9, '83.

Almshouse not owned by town.

The keeper contracts with the towns of Easton, Weston, and Trumbull, for both out-door and in-door poor, excepting the insane of the last two towns.

Almshouse does not receive prisoners.

Number of inmates at date of visit: from Easton, 2; 1 man, 1 woman; from Trumbull, 2 men; from Weston, 3 men, 1 woman; children under 16, 2 boys, 1 girl; total, 11.

Number of feeble-minded or idiotic, 2: 1 man, 1 woman.

Number of insane, 2: 1 man, 1 woman.

Able to work, none.

The children are American: girl aged 5 years; the boys 7 years and 2 years respectively.

GREENWICH—Visited February 5, '85.

Almshouse owned by town: about 80 acres land attached.

Keeper receives \$500 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 22: men 14, women 8.

Number of feeble minded or idiotic, 4: men 3, women 1.

Number of insane, 9—men.

Number of inmates able to work, none.

HUNTINGTON—Visited February 3, '85.

Almshouse not owned by town.

Keeper receives \$2.50 per week for board of each inmate.

Contract does not include outside relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 4: men 1, women 3, children, none.

Feeble minded or idiotic, none; insane 1—a man.

Able to work, 1—a man.

NEW CANAAN—Visited February 4, '85.

Almshouse owned by the town: 100 acres of land with house.

Keeper receives \$500 per year; contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 13: men 9, women 1; children under 16, boys 1, girls 2.

Feeble-minded, idiotic, or insane, 1—a man.

Inmates able to work, none.

NEWTOWN—Visited February 4, '85.

Almshouse not owned by town.

Keeper receives \$1,200 per year; contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 15: men 6, women 9, children, none.

Feeble-minded, idiotic, or insane, none.

Inmates able to work, none.

NORWALK—Visited February 4, '85.

Almshouse owned by town: 35 acres of land attached.

Keeper receives \$450 per year; town furnishes everything.

Almshouse does not receive prisoners.

Number of inmates, 29: men 15, women 13, children 1—a boy, 4 weeks old, Irish.

Feeble-minded, idiotic, or insane, 3: men 2, women 1.

Able to work, all inmates.

REDDING—Visited August 9, '83.

Almshouse not owned by town.

Keeper receives \$650 per year: contract includes out-door relief: the insane not included in contract.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 3: all men.

Feeble-minded, idiotic, or insane, none.

All the inmates able to work more or less.

RIDGEFIELD—Visited August 20, '83.

Almshouse owned by town: about 45 acres land attached.

Keeper receives \$400 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 4: women 2, boys under 16, 2; both women able to work.

Feeble-minded, idiotic, or insane, none.

The 2 boys aged 10 years and 8 years, respectively; both American; both 10 months in almshouse.

STAMFORD—Visited March 23, '85.

Almshouse owned by town: about 100 acres land attached.

Keeper receives \$500 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 36: men 17, women 17, children under 16—1 boy and 1 girl.

Number of feeble-minded or idiotic, 8: men 5, women 3.

Insane, none.

Number of inmates able to work, 25: men 10, women 15.



## STRATFORD—Visited August 9, '83.

Almshouse not owned by town.

Keeper receives \$2,100 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 2: 1 man, 1 woman.

Number of feeble-minded or idiotic—the woman; insane, none.

TRUMBULL—see EASTON.

WESTON—see EASTON.

## WESTPORT—Visited February 4, '85.

Almshouse not owned by town.

Keeper receives \$1,600 per year; contract includes out-door relief.

Almshouse does not receive prisoners.

Inmates at date of visit, 5: men 4, women 1.

Number of feeble-minded, idiotic, or insane, none.

Able to work, none.

## WILTON—Visited February 4, '85.

Almshouse not owned by town.

Keeper receives \$320 per year; contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 2: men 1, women 1.

Number of feeble-minded, idiotic, or insane, none.

Number able to work, none.

## WINDHAM COUNTY.

## BROOKLYN—Visited December 10, '84.

Almshouse not owned by town.

Keeper receives \$1,300 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 4: men 2, women 2.

Feeble-minded, idiotic, or insane, none.

## CANTERBURY—Visited December 11, '84.

Almshouse owned by town: about 100 acres land attached.

Keeper hires the farm, and receives \$1.55 per week for each pauper: his contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 10: men 4, women 6.

Number of feeble-minded or idiotic, 1: a woman.

Number of insane, 1: a woman.

Number able to work, 3: all men.

## KILLINGLY—Visited December 14, '83.

Almshouse owned by town: about 100 acres land attached.

Keeper receives \$500 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 13: men 7; women 6.

Number of feeble-minded or idiotic, 1: a man.

Number of insane, 2: 1 man, 1 woman.

There were fewer inmates here than at any previous time for 30 years. There are usually from 5 to 10 children here.

## PLAINFIELD—Visited December 10, '84.

Almshouse owned by town: about 110 acres land attached.

Keeper receives \$300 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 6: men 3, women 3.

Feeble-minded or idiotic, none; insane, 1: a woman.

Number able to work, 2: men 1, women 1.

## POMFRET—Visited December 9, '84.

No almshouse owned by town: the poor have been kept by contract, which has run out. No poor now supported in the town, and no contract for such support.

## PUTNAM—Visited December 10, '84.

Almshouse owned by town: about 200 acres land attached.

Keeper's contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 12: men 4, women 7: children under 16, 1: a girl.

Number of feeble-minded or idiotic, 2: both women; insane, none.

Number able to work, 4: men 2, women 2.

The girl aged 10 years, French, father dead, several relatives in almshouse.

THOMPSON—Visited December 9, '84.

Almshouse owned by town: about 100 acres land attached.

Keeper's contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 11: men 4, women 6; children under 16, 1: a boy.

Number of feeble-minded or idiotic, 2: both women.

Number able to work, 7: men 1, women 6.

The boy aged 1 year, American; mother in almshouse.

WINDHAM—Visited December 9, '84.

Almshouse owned by town: about 60 acres land attached.

Keeper receives \$500 per year: contract does not include out-door relief, though supplies are kept at, and dealt out from, the almshouse.

Almshouse does not receive prisoners, except occasionally one awaiting trial; kept in cells.

Number of inmates at date of visit, 40: men 19, women 16; children under 16: boys 3, girls 2.

Number of feeble-minded or idiotic, 1: a man.

Number of insane, 1: a woman.

Number able to work, 15: men 10, women 5.

The boys aged respectively, 7 years, 3 years, and 15 months: Irish 2, French 1.

The girls aged respectively, 7 years and 8 months; French and Irish respectively.

WOODSTOCK—Visited December 9, '84.

Almshouse owned by town: about 200 acres land attached.

Keeper receives \$300 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 10: men 5, women 4; children under 16, 1: a boy.

Feeble-minded, idiotic, or insane, none.

Number able to work, 2: men 1, women 1.

The boy aged 4 years, English, mother dead, 3 years and 6 months in almshouse.

### LITCHFIELD COUNTY.

LITCHFIELD—Visited October 25, '83.

Almshouse owned by town: about 200 acres land attached.

Keeper receives \$400 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 11: men 5, women 5; children under 16, 1 girl.

Number of feeble-minded or idiotic, 4: men 2, women 2.

Number of insane, 1: a man.

Number of men able to work, 2: of women, 1.

The girl aged 9 years, American: 9 years in almshouse.

BRIDGEWATER—Visited November 1, '83.

Almshouse not owned by town.

Keeper receives \$500 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 3: men 1; children under 16, 2 boys.

Number of feeble-minded or idiotic, 1: a man; insane, none.

Number able to work, 1: a man.

The boys aged respectively, 6 years and 3 years: both American; both 10 months in almshouse.

COLEBROOK—Visited November 1, '83.

Almshouse not owned by town.

Keeper receives \$1,100 per year: contract includes out-door relief, insane excepted.

Almshouse does not receive prisoners.



Number of inmates at date of visit, 5: women 2; children under 16: boys 1, girls 2.

Feeble-minded, idiotic, or insane, none.

Number able to work, 2: women.

The boy aged 15 years, colored; 12 years in almshouse.

The girls aged respectively, 7 years and 5 years: both colored, both 3 years in almshouse.

CORNWALL—Visited December 10, '83.

Almshouse not owned by town.

Keeper receives \$600 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 7: men 2, women 3; children under 16: 2 boys.

Number of feeble-minded or idiotic, 1: a man; insane, none.

Able to work, none.

The two boys aged respectively, 11 years and 6 years, Americans.

GOSHEN—Visited December —, '83.

But one pauper, a man who is boarded in a private family.

KENT—Visited October 29, '83.

Almshouse owned by town: about 120 acres land attached.

Keeper receives \$400 per year: contract includes out-door relief, tramps excepted.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 6: men 4, women 1; children under 16, 1: a boy.

Number of feeble minded or idiotic, 1: a man; insane, none.

Number able to work, 2: men.

The boy, aged 12, colored; 4 years in almshouse.

NEW HARTFORD—Visited September 4, '83.

Almshouse not owned by town.

Keeper receives \$1,200 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates, 3: all women.

All the inmates feeble-minded or idiotic; insane, none.

Number able to work, 1.

## NEW MILFORD—Visited October 11, '83.

Almshouse owned by town: about 125 acres of land attached.

Keeper receives \$400 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 13: men 8, women 3; children under 16, 2: boys.

Number of feeble-minded or idiotic, 2: men.

Number of insane, 1: a woman.

Number able to work, 3: 2 men, 1 woman.

The boys aged respectively, 8 years and 3 years, both American; in the almshouse 6 years and 3 years, respectively.

## NORFOLK—Visited October 10, '83.

Almshouse owned by town: about 100 acres land attached.

Keeper receives use of farm and stock, and \$1.00 per week for each pauper up to 10; above 10, \$1.50 per week.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 5: men 2, women 1; children under 16, 2: 1 boy, 1 girl.

Feeble-minded, idiotic, or insane, none.

None of the inmates able to work.

The girl, aged 5 years, American; 6 months in almshouse.

The boy, aged 2 years, American; 6 months in almshouse.

## PLYMOUTH—Visited November 1, '83.

Almshouse not owned by town.

Keeper receives \$833 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 3: men 1, women 1; 1 boy under 16.

Feeble-minded, idiotic, or insane, none.

All the inmates are able to work more or less.

The boy, aged 10 years, Irish-American; in almshouse from birth.

## SALISBURY—Visited November 17, '83.

Almshouse owned by town: about 180 acres land attached.

Keeper receives \$350 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 15: men 11; women 3; children under 16: 1, a boy.

Number of feeble-minded or idiotic, 1: a man.

Number of insane, 6: men, 1; women, 5.

None of the inmates able to work.

The boy aged 10 years, colored; 3 years in almshouse.

SHARON—Visited December 10, '83.

Almshouse owned by town: about 100 acres land attached.

Keeper receives \$300 per year: contract does not include outdoor relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 9: men, 4; women, 2; children under 16: boys, 2; girls, 1.

Number of feeble-minded or idiotic, 2: both men; insane, none.

Number able to work, 2: 1 man; 1 woman.

The boys aged respectively 8 years and 4 years; both American, and 2 years in almshouse.

The girl aged 7 months, American.

TORRINGTON—Visited October 10, '83.

Almshouse owned by town: about 175 acres land attached.

Keeper receives \$400 per year: contract does not include outdoor relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 8: men 6, women 1; 1 boy under 16.

Feeble-minded or idiotic, none.

Number of insane, 2: both men.

Able to work, none.

The boy, aged 10 years, colored; 4 years in almshouse.

WARREN—Visited December 5, '83.

Almshouse not owned by town.

Keeper receives \$400 per year: contract includes outdoor relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 3: men 2, women 1.

Number of feeble-minded or idiotic, 1: a man.

Number of insane, 1: a man.

Number able to work, 2: both men.

WASHINGTON—Visited December 11, '83.

Almshouse not owned by town.

Keeper receives \$875 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 9: men, 4; women, 5.

Number of feeble-minded or idiotic, 1: a man; insane, none.

Number able to work, 2: both men.

WINCHESTER—Visited September 4, '83.

Almshouse owned by town: about 90 acres land attached.

Keeper receives \$2,750 per year: contract includes out door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 8: men 4, women 4.

All the inmates able to work more or less.

WOODBURY—Visited November 4, '83.

Almshouse not owned by town.

Keeper receives \$1,000 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 12: men, 4; women, 3; children under 16, 5: boys, 1; girls, 4.

Number of feeble-minded or idiotic, 1: a man; insane none.

Number able to work, 4: 1 man; 3 women.

The boy aged 10 years, American; 10 years in almshouse.

The 4 girls aged respectively 10 years, 5 years, 7 years, and 8 years; all American: the first three in almshouse all their lives; the last one in almshouse 5 years.

MIDDLESEX COUNTY.

MIDDLETOWN—Visited August 14, '83.

Almshouse owned by town: about 65 acres of land attached.

Keeper receives \$400 per year: contract does not include out-door relief.



Almshouse does not receive prisoners.

Number of inmates at date of visit, 16: men 10, women 6.

Number of feeble-minded or idiotic, 1: a woman.

Number of insane, 2: men 1, women 1.

Number able to work, 6: men 4, women 2.

HADDAM—Visited September 28, '83.

Almshouse not owned by town.

Keeper receives \$600 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 5: men 1, women 3: girl under 16, 1.

Number of feeble-minded or idiotic, 1; a woman.

Number of insane, 1; a woman.

One man and one woman able to work.

Girl aged 6, American: (since provided with good home by Mrs. Smith of this board).

CHATHAM—Visited September 6, '83.

Almshouse owned by town: about 40 acres land attached.

Keeper receives \$300 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 5: men 3, women 2.

Number of feeble-minded or idiotic, 2: men 1, women 1; insane, none.

Number able to work, 4: men 3, women 1.

CHESTER—

Almshouse owned by town: not used as such; rented.

EAST HADDAM—Visited October 27, '83.

Almshouse owned by town: about 130 acres land attached.

Keeper receives \$325 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 6: men 3, women 3.

Number of feeble-minded or idiotic, 1: a man.

Number of insane, 1: a woman.

Number able to work; 4: men 2, women 2.

Essex—Visited October 27, '83.

Almshouse empty and closed: no keeper.

Old Saybrook—

Almshouse owned by town: not used as such; rented.

Portland—Visited September 5, '83.

Almshouse owned by town: about 100 acres land attached.

Keeper receives \$250 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 17: men 5, women 5; children under 16, boys 5, girls 2.

Feeble-minded or idiotic, none.

Number of insane, 1: a woman.

Number able to work, 3: men 2, women 1.

The 5 boys aged respectively, 11 years, 8 years, 4 years, 9 years, and 4 years: the first three Americans; the last two Swedes; the first three 3 years or more in almshouse; the last two 8 months.

The girls aged respectively 6 years and 2 years: both Swedes; 8 months in almshouse.

Saybrook—Visited October 27, '83.

Almshouse owned by town: about 18 acres of land attached; is under lease to keeper.

No contract except to board paupers sent there by selectmen at a certain sum per week: no inmates at date of visit.

## TOLLAND COUNTY.

Tolland—Visited September 19, '83.

Almshouse not owned by town.

Keeper receives \$300 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 3: men 1, women 2.

Feeble-minded, idiotic, or insane, none.

## COVENTRY—Visited March 26, '85.

Almshouse not owned by town.

Keeper receives \$1,200 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates, 8: 1 man, 6 women, 1 boy under 16.

Number of feeble-minded or idiotic, 3 women.

Able to work, 2: 1 man and 1 woman.

## MANSFIELD—Visited March 26, '85.

Almshouse not owned by town.

Keeper receives \$1,200 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 15: men 5, women 10.

Number of feeble-minded or idiotic, 2: 1 man, 1 woman.

Number of insane, 3: 1 man, 2 women.

Number able to work, 3: 1 man, 2 women.

## SOMERS—Visited March 26, '85.

Almshouse not owned by town.

Keeper receives \$800 per year: contract includes out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 6: men 3, women 3.

Number of feeble-minded or idiotic, 3: men 1, women 2.

Inmates able to work, 3: men 2, women 1.

## STAFFORD—Visited March 26, '85.

Almshouse owned by town: about 1 acre of land attached.

Keeper receives \$300 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 9: men 4, women 4, children under 16, 1: a girl.

Number of feeble-minded or idiotic, 2: men.

Able to work, 2: 1 man, 1 woman.

VERNON—Visited September 19, '83.

Almshouse owned by town: about 60 acres land attached.

Keeper receives \$625 per year: contract does not include out-door relief.

Almshouse does not receive prisoners.

Number of inmates at date of visit, 14: men 3, women 10; children under 16, 1: a boy.

Number of feeble-minded or idiotic, 3: all women.

Number of insane, 1: a woman.

Number able to work, 3: men 1, women 2.

The boy aged 5 years: American; 1 year in almshouse *this time*; born there; mother in Insane Asylum.



## SUMMARY.

Number of towns owning their poor-houses, 61.

Number of poor-houses that receive prisoners, 11.

Number of acres of land attached to poor-houses owned by towns, 5,432.

Number of paupers found in poor-houses of 100 towns, 1,415.

Number of paupers able to work, 357. (Some of these, however, are more or less disabled by age, disease, or mental incapacity.)

Number of feeble-minded or idiotic paupers, 160.

Number of insane paupers, 121.

The sexes are not generally separated in the poor-houses, except that they sleep in different rooms; but these, as a rule, in the same hall. Men, women, and children usually eat and spend their days together, and associate together without supervision or restraint, other than the accident of numbers. Indeed, except in the poor-houses of Hartford and New Haven, and possibly, but to a less extent, in one or two other towns, there is no substantial and permanent separation of the sexes.

## THE COST OF POOR-SUPPORT BY TOWNS.

The following tables show the *cash expenditures* of the towns of the State for the support of their poor during the year ending October, 1884:

## HARTFORD COUNTY.

TOWNS.	Grand List, 1882.	Population, Census 1880,	Cash expense for poor support, October, 1882, to October, 1883.	Tax upon Grand List for such support that year.	Cost of such support per head of population that year.
Hartford,.....	\$48,570,137	42,551	\$80 510.16	1.6 mills.	\$1.89
Avon,.....	508,179	1,057	800.00	1.6 "	.75, 7
Berlin,.....	1,062,646	2,385	1,708.11	1.6 "	.71, 6
Bloomfield,.....	808,099	1,346	711.13	.9 "	.52, 8
Bristol,.....	2,185,426	5,347	5,274.48	2.4 "	.98, 6
Burlington,.....	374,962	1,224	938.43	2.5 "	.76, 7
Canton,.....	1,244,360	2,301	1,557.50	1.2 "	.67, 7
East Granby,.....	498,745	754	455.75	.9 "	.60, 4
East Hartford,.....	1,813,724	3,500	3,561.36	2. "	1.01, 8
East Windsor,.....	1,193,039	3,019	1,717.51	1.4 "	.56, 9
Enfield,.....	2,698,571	6,755	8,803.06	3.3 "	1.30, 3
Farmington,.....	1,796,267	3,017	1,498.95	.8 "	.49, 7
Glastonbury,.....	1,128,277	3,580	2,019.54	1.8 "	.56, 4
Granby,.....	461,759	1,340	984.41	2.1 "	.73, 5
Hartland,.....	249,579	643	271.79	1.1 "	.42, 3
Manchester,.....	2,766,628	6,462	4,570.50	1.7 "	.70, 7
Marlborough,.....	141,582	391	790.08	5.6 "	2.02
New Britain,.....	5,801,665	13,979	13,719.90	2.4 "	.98, 1
Newington,.....	450,728	934	960.55	2.1 "	1.02, 3
Plainville,.....	628,119	1,930	1,541.06	2.5 "	.79, 8
Rocky Hill,.....	401,108	1,108	620.34	1.5 "	.56
Simsbury,.....	1,134,587	1,830	2,434.90	2.1 "	1.33
Southington,.....	2,182,331	5,411	4,069.11	1.9 "	.75, 2
South Windsor,.....	1,382,267	1,902	1,249.68	.9 "	.65, 7
Suffield,.....	1,875,350	3,225	1,606.06	.9 "	.49, 8
West Hartford,.....	2,281,576	1,828	1,194.80	.5 "	.65, 4
Wethersfield,.....	1,257,455	2,173	1,102.85	.9 "	.50, 7
Windsor,.....	1,580,113	3,058	1,863.40	1.2 "	.60, 9
Windsor Locks,.....	755,959	2,332	1,439.91	1.9 "	.61, 7

## NEW HAVEN COUNTY.

TOWNS.	Grand List, 1882.	Population, Census 1880.	Cash expense for poor support, October, 1882, to October, 1883.	Tax upon Grand List for such support, that year.	Cost of such support per head of population that year.
New Haven,.....	\$48,335,632	62,882	\$82,736.80	1.7 mills.	\$1.31,7
Beacon Falls,.....	314,511	379	278.40	.9 "	.74,8
Bethany,.....	280,558	637	227.77	.8 "	.35,7
Branford,.....	1,410,199	3,047	2,169.86	1.5 "	.71,2
Cheshire,.....	1,206,376	2,284	1,809.58	1.5 "	.79,2
Derby,.....	4,234,898	11,650	14,306.02	3.4 "	1.23,8
East Haven,.....	539,572	3,057	183.58	.3 "	.60
Guilford,.....	1,431,808	2,782	3,420.16	2.4 "	1.23,6
Hamden,.....	1,662,449	3,408	3,721.94	2.2 "	1.09,2
Madison,.....	748,474	1,672	810.72	1.1 "	.48,5
Meriden,.....	9,251,717	18,340	15,763.83	1.7 "	.80,5
Middlebury,.....	306,227	687	267.99	.9 "	.39
Milford,.....	1,174,368	3,347	1,815.40	1.5 "	.54,2
Naugatuck,.....	1,778,556	4,274	3,936.49	2.2 "	.92
North Branford,.....	494,382	1,025	526.14	1.1 "	.51,3
North Haven,.....	771,390	1,763	853.39	1.1 "	.48,4
Orange,.....	2,230,890	3,341	1,344.33	.6 "	.40,2
Oxford,.....	874,311	1,120	657.99	1.8 "	.58,7
Prospect,.....	175,525	492	435.59	2.5 "	.88,5
Seymour,.....	1,018,857	2,318	3,227.47	3.2 "	1.39,2
Southbury,.....	626,677	1,740	448.47	.7 "	.25,8
Wallingford,.....	2,384,139	4,686	4,310.03	1.8 "	.92
Waterbury,.....	8,742,207	20,270	17,631.65	2.0 "	.87
Wolcott,.....	224,950	493	000.	.0 "	.00
Woodbridge,.....	408,715	829	604.68	1.5 "	.72,9

## NEW LONDON COUNTY.

TOWNS.	Grand List, 1882.	Population, Census 1880.	Cash expense for poor support, October, 1882, to October, 1883.	Tax upon Grand List for such support, that year.	Cost of such support per head of population that year.
New London,.....	\$6,954,454	10,537	\$11,914.81	1.7 mills.	\$1.13, 1
Norwich,.....	13,036,973	21,143	23,328.54	1.8 "	1.10, 3
Bozrah,.....	499,493	1,155	734.12	1.5 "	.63, 5
Colchester,.....	1,400,732	2,974	2,616.00	1.9 "	.88
East Lyme,.....	637,156	1,731	682.22	1.1 "	.39, 4
Franklin,.....	310,860	686	66.78	.2 "	.09, 7
Griswold,.....	1,357,846	2,745	1,048.40	.8 "	.38, 2
Groton,.....	1,956,419	5,128	2,800.00	1.4 "	.54, 6
Lebanon,.....	1,094,364	1,845	1,945.32	1.8 "	1.05, 4
Ledyard,.....	507,321	1,373	1,269.19	2.5 "	.92, 4
Lisbon,.....	254,539	630	350.73	1.4 "	.55, 7
Lyme,.....	287,874	1,025	583.59	2. "	.56, 9
Montville,.....	1,066,824	2,664	2,474.52	2.3 "	.92, 9
North Stonington,.....	733,420	1,769	1,295.72	1.8 "	.61, 9
Old Lyme,.....	489,331	1,387	2,778.28	5.7 "	2.00, 3
Preston,.....	870,919	2,523	1,005.65	1.2 "	.39, 9
Salem,.....	238,815	574	301.71	1.3 "	.52, 5
Sprague,.....	1,165,727	3,207	2,508.13	2.1 "	.78, 2
Stonington,.....	5,208,918	7,355	4,223.65	.8 "	.57, 4
Voluntown,.....	214,820	1,186	917.22	4.3 "	.77, 3
Waterford,.....	1,159,958	2,701	2,441.79	2.1 "	.90, 4



## FAIRFIELD COUNTY.

TOWNS.	Grand List, 1882.	Population, Census 1880.	Cash expense for poor support, October, 1882, to October, 1883.	Tax upon Grand List for such support, that year.	Cost of such support per head of population that year.
Bridgeport,.....	\$12,388,405	29,148	\$19,734.90	1.6 mills.	\$0.67,7
Danbury,.....	5,845,548	11,666	9,263.65	1.6 "	.79,4
Bethel,.....	964,607	2,727	1,703.93	1.8 "	.62,5
Brookfield,.....	610,087	1,152	833.32	1.4 "	.72,3
Darien,.....	1,540,650	1,949	2,623.18	1.7 "	1.34,6
Easton,.....	427,621	1,145	591.34	1.4 "	.51,6
Fairfield,.....	2,243,035	3,748	3,426.97	1.5 "	.91,4
Greenwich,.....	3,705,075	7,892	9,230.29	2.5 "	1.16,9
Huntington,.....	1,184,122	2,499	1,126.28	1. "	.45,1
Monroe,.....	506,675	1,157	440.00	.9 "	.38
New Canaan,.....	1,246,660	2,673	2,001.86	1.6 "	.74,9
New Fairfield,.....	411,387	791	624.60	1.5 "	.79
Newtown,.....	1,805,770	4,013	2,295.67	1.3 "	.57,2
Norwalk,.....	5,879,577	13,956	9,695.89	1.8 "	.69
Redding,.....	838,936	1,540	700.00	.8 "	.45,5
Ridgefield,.....	1,087,694	2,028	3,973.57	3.1 "	1.95,9
Sherman,.....	362,164	828	1,153.46	3.2 "	1.39,3
Stamford,.....	7,511,124	11,297	13,017.16	1.7 "	1.15,2
Stratford,.....	1,591,777	4,251	1,921.65	1.2 "	.45,2
Trumbull,.....	629,031	1,323	850.00	1.3 "	.64,2
Weston,.....	416,097	918	825.00	2. "	.89,9
Westport,.....	2,106,070	3,477	2,097.46	1. "	.60,3
Wilton,.....	706,816	1,804	475.37	.7 "	.25,5

## WINDHAM COUNTY.

TOWNS.	Grand List, 1882.	Population, Census, 1880.	Cash expense for poor support, October, 1882, to October, 1883.	Tax upon Grand List for such support, that year.	Cost of such support per head of population that year.
Brooklyn,.....	\$1,524,984	2,308	\$1,378.32	.9 mills.	\$0.59,7
Ashford,.....	316,426	1,041	724.60	2.3 "	.60
Canterbury,.....	514,225	1,272	837.90	1.6 "	.65,9
Chaplin,.....	230,298	627	338.02	1.5 "	.53,9
Eastford,.....	220,130	855	291.13	1.3 "	.34
Hampton,.....	358,634	827	650.00	1.8 "	.78,6
Killingly,.....	2,256,165	6,921	5,329.31	2.3 "	.74,1
Plainfield,.....	1,899,462	4,021	1,917.60	1.1 "	.47,7
Pomfret,.....	763,619	1,470	876.17	1.1 "	.59,6
Putnam,.....	1,948,668	5,827	3,323.29	1.7 "	.57
Scotland,.....	322,712	590	450.00	1.4 "	.76,3
Sterling,.....	280,197	957	140.90	.5 "	.14,7
Thompson,.....	1,816,451	5,051	2,888.46	1.5 "	.56,2
Windham,.....	4,195,604	8,264	8,606.69	2.1 "	1.04,1
Woodstock,.....	982,383	2,639	2,553.11	2.6 "	.96,7

## LITCHFIELD COUNTY.

TOWNS.	Grand List, 1882.	Population, Census 1880.	Cash expense for poor support, October, 1882, to October, 1883.	Tax upon Grand List for such support, that year.	Cost of such support per head of population that year.
Litchfield,.....	\$1,971,833	3,410	\$6,283.97	3.2 mills.	\$1.84, 3
Barkhamsted,.....	425,261	1,297	716.18	1.7 "	.55, 2
Bethlehem,.....	438,161	655	272.50	.6 "	.41, 6
Bridgewater,.....	416,605	708	264.66	.6 "	.37, 4
Canaan,.....	520,916	1,157	927.93	1.8 "	.80, 2
Colebrook,.....	422,638	1,148	1,231.86	2.9 "	1.07, 3
Cornwall,.....	720,609	1,583	602.12	1. "	.38
Goshen,.....	736,272	1,093	632.77	.9 "	.57, 9
Harwinton,.....	465,354	1,016	751.32	1.6 "	.73, 9
Kent,.....	494,389	1,622	900.00	1.8 "	.55, 5
Morris,.....	364,792	627	239.17	.7 "	.38, 1
New Hartford,.....	1,050,175	3,302	1,357.95	1.3 "	.41, 1
New Milford,.....	1,943,040	3,907	2,943.37	1.5 "	.75, 3
North Canaan,.....	695,725	1,537	1,627.97	2.3 "	1.05, 9
Norfolk,.....	848,620	1,418	1,207.07	1.4 "	.85, 1
Plymouth,.....	993,139	2,350	1,379.76	1.4 "	.58, 7
Roxbury,.....	489,855	950	225.19	.5 "	.23, 7
Salisbury,.....	2,230,435	3,715	3,215.79	1.4 "	.86, 6
Sharon,.....	1,298,657	2,580	2,880.03	2.2 "	1.11, 6
Thomaston,.....	1,529,320	3,225	1,291.45	.8 "	.40
Torrington,.....	1,639,407	3,327	2,268.05	1.4 "	.68, 2
Warren,.....	274,077	639	400.00	1.5 "	.62, 6
Washington,.....	952,400	1,590	936.35	1. "	.58, 9
Watertown,.....	1,612,781	1,897	635.27	.4 "	.33, 5
Winchester,.....	2,930,697	5,142	2,859.90	1. "	.55, 6
Woodbury,.....	1,013,801	2,149	1,247.79	1.2 "	.58, 1

## MIDDLESEX COUNTY.

TOWNS.	Grand List, 1882.	Population, Census 1880.	Cash expense for poor support, October, 1882, to October, 1883.	Tax upon Grand List for such support that year.	Cost of such support per head of population that year.
Middletown,.....	\$8,448,786	11,732	\$12,231.18	1.4 mills.	\$1.04 3
Haddam,.....	686,762	2,419	1,819.46	1.9 "	.54,5
Chatham,.....	638,928	1,967	1,726.41	2.7 "	.87,8
Chester,.....	442,467	1,177	639.11	1.4 "	.54,3
Clinton,.....	645,854	1,402	2,051.45	3.2 "	1.46,3
Cromwell,.....	748,237	1,640	825.90	1.1 "	.50,4
Durham,.....	467,430	990	841.57	1.8 "	.85
East Haddam,.....	1,356,335	3,032	1,687.12	1.2 "	.55,6
Essex,.....	996,124	4,855	624.72	.6 "	.33,7
Killingworth,.....	225,824	748	300.00	1.3 "	.40,1
Middlefield,.....	560,034	928	550.37	1. "	.59,3
Old Saybrook,.....	1,158,924	1,302	459.46	.4 "	.35,3
Portland,.....	1,939,854	4,157	6,928.14	3.6 "	1.66,7
Saybrook,.....	566,731	1,362	562.19	1. "	.41,3
Westbrook,.....	502,367	878	708.65	1.4 "	.80,7



## TOLLAND COUNTY.

TOWNS.	Grand List, 1882.	Population, Census 1880.	Cash expense for poor support, October, 1882, to October, 1883.	Tax upon Grand List for such support that year.	Cost of such support per head of population that year.
Tolland,.....	\$330,275	1,169	\$450.00	1.4 mills.	\$0.38, 5
Andover,.....	228,428	428	334.01	1.5 "	.78
Bolton,.....	180,797	512	835.64	4.6 "	1.63, 2
Columbia,.....	287,079	757	365.94	1.3 "	.48, 3
Coventry,.....	715,681	2,043	1,185.31	1.6 "	.58
Ellington,.....	744,359	1,569	997.36	1.3 "	.63, 6
Hebron,.....	491,427	1,243	637.47	1.3 "	.51, 3
Mansfield,.....	643,228	2,154	1,377.72	2.1 "	.64
Somers,.....	610,051	1,242	822.96	1.3 "	.66, 3
Stafford,.....	1,090,974	4,455	2,837.20	2.6 "	.63, 7
Union,.....	156,402	539	471.11	3. "	.87, 4
Vernon,.....	2,719,840	6,915	5,104.05	1.9 "	.70, 9
Willington,.....	237,834	1,086	807.02	3.4 "	.74, 3

## RECAPITULATION BY COUNTIES.

COUNTIES.	Grand List, 1882.	Population, Census 1880.	Cash expense for poor support, October, 1882, to October, 1883.	Tax upon Grand List for such support that year.	Cost of such support per head, of population that year.
Hartford,.....	\$87,220,238	125,382	\$147,975.32	1.7 mills.	\$1.18
New Haven,.....	90,127,388	156,523	161,488.28	1.8 "	1.03.2
New London,.....	39,446,763	74,338	65,286.37	1.7 "	.87.8
Fairfield,.....	53,508,928	112,042	88,605.55	1.7 "	.79.1
Windham,.....	17,629,958	42,670	30,254.50	1.7 "	.70.9
Litchfield,.....	26,478,959	52,044	37,298.42	1.4 "	.71.7
Middlesex,.....	19,384,657	35,589	31,455.73	1.6 "	.88.4
Tolland,.....	8,436,375	24,112	16,225.79	1.9 "	.67.3
THE STATE,.....	\$342,242,266	622,700	\$578,589.96	1.690 mills.	.92.92

THE EXPENDITURES BY THE STATE, for the fiscal year ending Nov. 30, 1884, for charitable purposes, were as follows:

State Reform School, Meriden, . . . . .	\$72,289.60
Conn. Industrial School for Girls, Middletown, . . . . .	38,721.72
American Asylum for Deaf and Dumb, Hartford, . . . . .	8,040.78
Perkins' Institution for the Blind, Boston, Mass., . . . . .	4,675.00
Conn. School for Imbeciles, Lakeville, . . . . .	7,728.38
General Hospital Soc., New Haven (Annual Appropriation), . . . . .	5,000.00
Hartford Hospital (Annual Appropriation), . . . . .	5,000.00
Conn. Hospital for Insane, Middletown, . . . . .	119,444.42
Retreat for the Insane, Hartford, . . . . .	3,254.59
Vermont Asylum for the Insane, Battleboro, Vt., . . . . .	560.29
Butler Hospital for the Insane, Providence, R. I., . . . . .	430.84
New Hampshire Asylum for the Insane, Concord, N. H., . . . . .	360.29
Danvers Lunatic Hospital, Danvers, Mass., . . . . .	209.14
New Jersey State Hospital, . . . . .	26.00
Cromwell Hall (insane patients), . . . . .	53.49
Clark Institution for Deaf Mutes, . . . . .	175.00
Conn. School for Imbeciles, Lakeville (for insane patients), . . . . .	416.00
Whipple's Home School for Deaf Mutes, Mystic Bridge, . . . . .	931.88
General Hospital Soc., and Hartford Hospital (for soldiers), . . . . .	11,747.64
Bridgeport Hospital, . . . . .	28.00
Sundry bills for sick soldiers, . . . . .	1,224.28
For support of soldiers' children (orders of sundry towns), . . . . .	6,342.10
Under Comptroller's contract for support of State paupers, . . . . .	5,962.56
Fitch's Home for Soldiers (Annual Appropriation), . . . . .	500.00
Fitch's Home for Soldiers (sick and wounded soldiers), . . . . .	4,810.69
	<hr/>
	\$297,928.69

## THE INSANE.

The Board has made the visits required by law to the Connecticut Hospital for the Insane at Middletown.

The number of patients admitted during the year ending November 30, 1884, was 243; men, 121; women, 122.

The total number under treatment was 103.

The number discharged was 180; men, 100; women, 80.

The number of deaths was 55; men, 34; women, 21.

The average number of patients was 883.22; men, 402.58; women, 480.64.

The amount paid by the State for board and treatment of patients, building expenses and trustees' expenses was \$117,-101.33.

There were one hundred and twenty insane persons provided for by the State during the year, outside of the Connecticut Hospital for the Insane, as follows:

At Retreat for the Insane, Hartford, - - -	64
At Connecticut School for Imbeciles, - - -	3
At Vermont Asylum for the Insane, - - -	6
At Butler Hospital for the Insane, Rhode Island, -	6
At New Hampshire Asylum for the Insane, - -	39
At Danvers Lunatic Hospital, Mass., - - -	2

## THE STATE REFORM SCHOOL.

The Board has made the visits required by law to the State Reform School at Meriden. The following is a summary for the past year:

Number of boys received since the opening of the school in March, 1854, - - -	3,812
Number in the school, December 1, 1883, - -	406
Number received during the last year, - -	232
Number discharged in various ways during the last year, - - - - -	231
Number remaining in the school November 30, 1884, -	407

Of the two hundred and thirty-two boys received during the last year, one hundred and sixty-seven were committed by



magistrates (by the superior court three, by police courts ninety-one, and by justices of the peace seventy-two); seven by friends; thirty-six were returned under old commitments, and twenty-two returned of their own accord.

Of the one hundred and sixty-seven boys committed by magistrates, fifty-four are from Hartford county, forty-five from New Haven county, twenty-three from Fairfield county, eighteen from New London county, thirteen from Middlesex county, eleven from Litchfield county, two from Tolland county, and one from Windham county.

Of the one hundred and seventy-four boys committed during the last year, for the first time, one hundred and thirty-nine were born in Connecticut, seven in New York, seven in Massachusetts, one in New Jersey, one in Virginia, one in Vermont, three in Pennsylvania, one in the District of Columbia, one in Canada, two in Ireland, one in England, two in Germany, one in Sweden, and the birth-places of five are unknown. As to nationality they are divided as follows: American, 56; Irish, 78; English, 5; German, 10; French, 3; Scotch, 5; Swede, 1; colored, 13; unknown, 2; and, as to their ages, they were committed as follows:

At 7 years, -	-	2	At 13 years, -	-	24
At 8 years, -	-	3	At 14 years, -	-	34
At 9 years, -	-	6	At 15 years, -	-	27
At 10 years, -	-	15	At 16 years, -	-	15
At 11 years, -	-	25	At 17 years, -	-	1
At 12 years, -	-	20	At 18 years, -	-	1

The record of two hundred and thirty-one discharges during the last year is made up as follows:

Placed with farmers, -	-	-	-	-	13
Placed at trade, -	-	-	-	-	5
Sentence expired, -	-	-	-	-	0
Returned to parents or friends, -	-	-	-	-	204
Discharged for defective mittimus, -	-	-	-	-	2
Escaped and not yet returned, -	-	-	-	-	1
Boarders dismissed, -	-	-	-	-	6

The sum paid by the State for board bills and trustees' expenses, the past year is \$76,551.84.

## CONNECTICUT INDUSTRIAL SCHOOL FOR GIRLS.

The Board has made the visits required by law to the Connecticut Industrial School for Girls at Middletown.

Number of girls received since January 1, 1870,	-	644
*Number of girls dismissed since January 1, 1870,	-	647
*Number of girls returned,	-	209
Number of girls remaining out,	-	438
Number of girls in the school December 1, 1883,	-	195
Number of girls received during the last year,	-	86
Whole number of girls under care during the last year,		281
Number of girls placed out,	-	75
Number of girls in the school December 1, 1884,	-	206

The six hundred and forty-four girls received have come from one hundred and eight towns. New Haven has sent one hundred and forty-three; Hartford one hundred and thirteen.

The sum paid by the State for board, etc., of the girls during the last fiscal year was \$33,849.45.

## THE CONNECTICUT SCHOOL FOR IMBECILES.

No data have been furnished the Board concerning this institution. The State beneficiaries in this school during the year numbered sixty-four. From the comptroller's report it appears that the amounts paid by the State for the year ending November 30, 1884, were as follows:

Orders for board bills and auditors' expenses,	-	\$7,728.38
Orders for board of insane beneficiaries,	-	416.00
Total,	-	\$8,144.38

## THE BLIND.

The provision made by the State for the blind is by way of an appropriation, under which they may be sent for care and instruction to the Perkins Institute for the Blind, in Boston. There have been seventeen beneficiaries of the State there during the last year, at an expense of \$4,675.

---

\* These figures include a number of girls who have been dismissed and returned more than once.

## THE DEAF AND DUMB

are provided for at the American Asylum for the Deaf and Dumb, at Hartford; at Whipple's Home School for Deaf Mutes, at Mystic Bridge; and at the Clarke Institute for Deaf Mutes, at Northampton, Mass.

In the American Asylum there are forty-eight State beneficiaries. There were no admissions during the year, the last bearing date September, 1883. The expenditures by the State amounted to \$8,040.78.

In Whipple's Home School there were seven State beneficiaries at the beginning of the year, and one was added in March, 1884,—a total of eight for the year, at an expense of \$931.88.

In the Clarke Institute there was one State beneficiary during the year, at an expense of \$175.

The total number of deaf mutes cared for and instructed at the expense of the State during the fiscal year ending Nov. 30, 1884, was fifty-seven; and the total cost of care and instruction was \$9,147.66.

## HARTFORD COUNTY TEMPORARY HOME.

The House was opened in the first week of October, 1883. It is in Bloomfield, a little less than five miles from the city hall of Hartford; by town roads, one mile from the Cottage Grove station, and two miles from the Bloomfield station, on the Connecticut Western railroad.

The children attend the district school of the neighborhood, which is near the Home.

The charge at the Home is two dollars per week for each child, including clothing and medical attendance.

The first child was admitted October 10, 1883, and, up to November 30, 1884, forty-nine children of the average age of seven years and two weeks, to wit, thirty-two boys, of the average age of six years, six months, and twenty-seven days, and seventeen girls of the average age of seven years, ten months, and twenty-six days, were admitted.

The following is the record, from memoranda kept at the Home, of children admitted, up to November 30, 1884, numbers being substituted for the names of the children :

No.	Admitted.	Age at Admission.	Nationality	Released.	How Committed.
1 a boy	Oct. 10, 1883	10 y'rs	Irish.	Dec. 24, 1883	By town of New Britain.
2 a boy	Oct. 10, 1883	9 y'rs	Irish.	Nov. 9, 1883	" "
3 a boy	Oct. 10, 1883	6 y'rs	Irish.	"	" "
4 a boy	Oct. 11, 1883	11 y'rs	Amer.	"	Manchester.
5 a boy	Oct. 12, 1883	7 y'rs	Amer.	"	So. Windsor.
6 a girl	Oct. 12, 1883	5 y'rs	Amer.	Oct. 16, 1884	" "
7 a girl	Oct. 12, 1883	5 y'rs	Amer.	Feb. 27, 1884	" "
8 a boy	Oct. 16, 1883	7 y'rs	Amer.	May 10, 1884	" Glastonbury.
9 a girl	Oct. 16, 1883	6 y'rs	Amer.	Nov. 1, 1883	" "
10 a girl	Oct. 16, 1883	4 y'rs	Amer.	Nov. 20, 1883	" "
11 a boy	Oct. 20, 1883	6 y'rs	French.	"	East Hartford.
12 a girl	Oct. 22, 1883	12 y'rs	Irish.	Nov. 20, 1883	" Bristol.
13 a boy	Oct. 22, 1883	4 y'rs	Irish.	"	" "
14 a boy	Oct. 22, 1883	5 y'rs	Irish.	"	" "
15 a boy	Oct. 27, 1883	8 y'rs	Amer.	"	Suffield.
16 a girl	Oct. 27, 1883	8 y'rs	Amer.	Dec. 8, 1883	" Farmington.
17 a boy	Oct. 30, 1883	6 y'rs	Colored.	Oct. 23, 1884	" Wethersfield.
18 a boy	Dec. 14, 1883	7 y'rs	Amer.	"	So. Windsor.
19 a boy	Dec. 14, 1883	5 y'rs	Amer.	Oct. 23, 1884	" "
20 a boy	Dec. 23, 1883	7 y'rs	Irish-Amer.	Mch. 18, 1884	By his mother.
21 a boy	Feb. 23, 1884	8 y'rs	Amer.	Mch. 29, 1884	" "
22 a boy	Mch. 11, 1884	10 y'rs	Amer.	Apr. 23, 1884	By Conn. Humane Society.
23 a girl	Mch. 17, 1884	5 y'rs	Colored.	Apr. 6, 1884	By her mother.
24 a boy	June 11, 1884	9 y'rs	Amer.	Sept. 13, 1884	By his mother.
25 a girl	July 12, 1884	8 y'rs	Irish-Amer.	"	By Police Court, Hartford.
26 a girl	July 12, 1884	6 y'rs	Irish-Amer.	"	" " "
27 a boy	July 12, 1884	4 y'rs	Irish-Amer.	"	" " "
28 a boy	July 12, 1884	4 y'rs	Irish-Amer.	"	" " "
29 a girl	July 12, 1884	15 y'rs	Irish-Amer.	July 16, 1884	By Conn. Humane Society.
30 a boy	July 23, 1884	12 y'rs	Amer.	Aug. 16, 1884	By his mother.
31 a girl	Aug. 2, 1884	10 y'rs	Irish.	Sept. 12, 1884	By her mother.
32 a boy	Aug. 6, 1884	8 y'rs	Irish-Amer.	Aug. 16, 1884	By City Miss'y So. Hartford.
33 a boy	Aug. 21, 1884	10 y'rs	Irish.	"	By town of Wethersfield.
34 a boy	Aug. 21, 1884	8 y'rs	Irish.	"	" "
35 a girl	Sept. 12, 1884	5 y'rs	Colored.	Sept. 17, 1884	By her mother.
36 a girl	Oct. 6, 1884	11 y'rs	Swede.	Nov. 13, 1884	By the town of N. Britain.
37 a boy	Oct. 21, 1884	1 y'r 5 mo's	French.	"	By his father.
38 a girl	Oct. 21, 1884	3 y'rs 5 mo's	French.	"	By her father.
39 a boy	Oct. 23, 1884	8 y'rs	Amer.	"	By Probate Court, Colchester.
40 a boy	Oct. 23, 1884	2 y'rs 9 mo's	Amer.	"	" " "
41 a boy	Nov. 1, 1884	3 y'rs	Amer.	"	By town of N. Britain.
42 a boy	Nov. 1, 1884	1 y'r 3 mo's	Amer.	Nov. 11, 1884	" "
43 a boy	Nov. 11, 1884	7 y'rs	German.	"	Bloomfield.
44 a boy	Nov. 15, 1884	7 y'rs	Irish.	"	" "
45 a boy	Nov. 15, 1884	5 y'rs	Irish.	"	" "
46 a girl	Aug. 19, 1884	13 y'rs	"	Aug. 22, 1884	By City Miss'y Soc. Hartford.
47 a girl	Aug. 21, 1884	10 y'rs	"	Aug. 23, 1884	" " "
48 a girl	Sept. 13, 1884	8 y'rs	"	Sept. 17, 1884	" " "
49 a boy	Aug. 23, 1884	4 y'rs	"	Aug. 24, 1884	" " "

Twenty-two of the forty-nine children admitted were not chargeable to towns, but were placed in the Home by private persons, societies, or probate or police courts, at the expense of such persons, societies, or the State, as follows, to wit: by their mothers, four boys and three girls; by their fathers, one boy and one girl; by the City Missionary Society of Hartford, two boys and three girls; by the Connecticut



Humane Society, one boy and one girl; by the police court of Hartford, two boys and two girls, and by the probate court of the district of Colchester, two boys. The two children placed there by their fathers, and the six children committed by courts, remained in the Home on November 30, 1884; the other fourteen children have been, under the direction of the board of management, provided with private homes before that date, except one girl, who was placed there by her mother August 2d, and returned to her September 12th.

Twenty-seven of the forty-nine children admitted, to wit: twenty boys, of the average age of six years seven months and twenty-eight days, and seven girls, of the average age of seven years three months and thirteen days, were placed in the Home by and at the expense of towns. Fourteen of these twenty-seven children, all boys, remained in the Home on November 30, 1884: and thirteen, to wit: seven girls and six boys, had gone before that date, as follows: one boy, who had been three years in a poor-house, was removed from the Home, after a stay of a few weeks there, by a guardian appointed after his admission there; another boy was removed to a hospital, by the exertions of the board of management, for the treatment of a chronic disease, and may return to the Home if he recovers; another boy, who was found to be but thirteen months old, and therefore not within the ages mentioned in the law, was removed to a private home, provided by the board of management, in which he is supported by his town; one girl is underwitted, and was removed to the Connecticut School for Imbeciles; and three boys and six girls were placed in private homes by the board of management, under and pursuant to provisions of the law.

Twenty-two, or nearly fifty per cent. of the forty-nine children admitted to the Home had, before November 30, 1884, been provided, through its agencies, with good private homes, thirteen of whom were not chargeable to towns, and nine of whom were so chargeable; and the nine children so chargeable have been removed from the poor lists, and have long since ceased to cost their towns anything.

As to the poor-house residence, if any, of three—one boy and two girls—of the nine children last mentioned, no record is at hand. As to the other six, one boy was in a poor-house his whole life—nine years and eight months, another boy three months, one girl eight years, another girl seven years, another girl five years, and a fourth girl four years, before going to the Home. Together these six children represent a poor-house life of thirty-three years and eleven months, or 1,760 weeks—an average of five years seven months and twenty-five days, or  $293\frac{1}{2}$  weeks each in the poor-house. They were in the Temporary Home an average of twelve weeks each, or a total of seventy-two weeks. What they had cost in poor-houses for 1,760 weeks is not known, but their seventy-two weeks in the Temporary Home cost their towns a total of \$144, or \$24 for each child; and in the private homes in which they were placed by its agencies, where they still remain, and where up to November 30, 1884, they had already been a total of 280 weeks, they cost their towns nothing. They have been under charge of the board of management, in the Home and in private homes, up to the last-named date, a total of 352 weeks, at an expense to their towns of less than 42 cents per week per child. At least four of these six children, from three different towns, are the offspring of several generations of town paupers.

The total stay in the Home of the nine town children who have been provided with private homes, was 121 weeks, at a total expense of \$242 to their towns. On November 30, 1884, they had together been in private homes a total of  $341\frac{1}{2}$  weeks. They had, therefore, taken together, been in the charge of the board of management in the Home and private homes, on the last-named date, a total of  $462\frac{1}{2}$  weeks, at an expense to their towns of  $52\frac{3}{10}$  cents a week, per child. And that expenditure has removed them from the poor lists, and given them good private homes, in which they have not cost, and are not likely to cost, their towns anything.

## NEW HAVEN COUNTY TEMPORARY HOME.

## Board of Management:

MESSRS. GEORGE F. PERRY,\* P. O. Waterbury,  
 HIRAM JACOBS, P. O. East Haven,  
 ALBERT B. DUNHAM,† P. O. Seymour,  
 County Commissioners.

Mrs. FRANCIS BACON, of the State Board of Charities,  
 P. O. New Haven.

Prof. WM. H. BREWER, of the State Board of Health,  
 P. O. New Haven.

## TOWN COMMITTEES.

New Haven, Mr. Charles Fabrique,	P. O. New Haven.
Mrs. Lee H. Bradley,	“ “
Mrs. Charles W. Allen,	“ “
Miss Rebekah G. Bacon,	“ “
Miss Justine Ingersoll,	“ “
Beacon Falls, Miss Ella E. Wood,	“ Beacon Falls.
Bethany, Mrs. Jerome A. Downs,	“ Westville.
Branford, Mrs. T. F. Hammer,	“ Branford.
Cheshire, Mrs. Emma Laing Gillette,	“ Cheshire.
Derby, Mrs. Flora A. Colburn,	“ Ansonia.
East Haven,	
Guilford, Miss Martha Russell,	“ Guilford.
Hamden, Miss Susan A. Dickerman,	“ Mt. Carmel.
Madison, Miss Kate H. Crampton,	“ Madison.
Meriden, Mrs. E. I. Merriman,	“ Meriden.
Middlebury,	
Milford, Miss Josie G. Beach,	“ Milford.
Naugatuck, Mrs. B. B. Tuttle,	“ Naugatuck.
North Branford, Mrs. William Wood,	“ North Branford.
North Haven,	
Orange, Mrs. Leverett B. Treat,	“ Orange.
Oxford, Mrs. Lewis Barnes,	“ Oxford.
Prospect, Mrs. W. H. Phipps,	“ Prospect.
Seymour,	

\* President.

† Secretary.

Southbury, Mrs. William E. Mitchell,	P. O. South Britain.
Wallingford, Mrs. Mary C. Reynolds,	“ Wallingford.
Waterbury, Miss A. O. Sperry,	“ Waterbury.
Wolcott, Mrs. Ira H. Hough,	“ Wolcott.
Woodbridge, Miss Elizabeth Russell,	“ Woodbridge.

## SUPERINTENDENT.

[The following report is furnished by Mrs. Francis Bacon.]

The Home was opened and ready for occupancy January 1, 1884, at Tyler City, twelve minutes from New Haven by the Derby railroad.

From its inaccessible position it is somewhat removed from general public interest, but ladies of New Haven have kindly remembered the children with presents of clothing and toys, and the members of the County Committee have aided the Board of Management materially in securing homes in families for those old enough to be placed.

Up to November 30, 1884, forty-four children had been received, the list reading as follows :

The first child received, January 17th, is a typical case, and is stated somewhat at length. A boy of 7, father unknown, mother a common pauper; the child had been four years in the alms-house of his town, and was so stolid and stupid in look and manner that the propriety of sending him to the School for Imbeciles was considered; at the end of a few months, however, in cheerful surroundings, and in association with children only, he perceptibly brightened, and on September 1st, was placed in a family where he is prized and cared for. A letter of Dec. 29th has been received, from which we quote: “He goes to school, and learns well. We love him, and would like to know what his birth-day is—all little folks like to have one.”

Following upon this child's admission to the Home came others in quick succession, and accounting first for those transferred to families, we have:

Cases 2, 3, and 4, American boys, brothers, under 10 years,



mother dead, father a deserter, children committed by the City Court of New Haven, February 15th. All placed in excellent homes by July 10th.

Cases 5 and 6, sisters under 14, Irish parentage, father and mother common drunkards in jail and alms-house; committed to the Home by City Court, New Haven, in March. Both placed in good homes in June.

Cases 7 and 8, brother and sister under 11, Americans, children of a soldier, lately dead; mother destitute; sent to the Home in March, placed in families in May.

Cases 9 and 10, brother and sister under 14, Irish parentage, father and mother intemperate; committed to the Home by City Court, New Haven, in March; both placed in families by July. These children were, later, returned to their parents, on recommendation of the City Court.

Case 11, girl of 10, Irish parentage, father a drunkard, mother in jail; committed to the Home by City Court, New Haven, July 10th; placed in family August 19th.

Cases 12 and 13, sisters under 11, father unknown, mother a drunkard in jail; committed to the Home by the City Court, New Haven, in July; one placed in a family in August, and one in November.

Case 14, girl of 14, Irish parentage, mother dead, father a drunkard. "He shovels coal," the child said, "but he drinks it as fast as he shovels it." Committed to the Home by the City Court, New Haven, in September; placed in a family in November.

All these children owe their good homes to the efficient aid of the County Committee in several different towns of this county, and 3 of the boys were provided for by the member from Preston, of New London County. All of them have received schooling and careful family training, and are in every respect well cared for. With the two exceptions above mentioned, they remain in the families with which they were placed.

Thirty children remain to be accounted for, to wit:

Six, whose parents were drunkards with only one remaining virtue—love for their children. This alone has lifted

them from their degradation; gradually they have gotten together household goods, and started afresh, in the hope of being trusted with their children again, who, on recommendation of the City Court, have been returned to them, so far without bad results.

Six who were sheltered at the Home until their parents were able to support them again, and who have been returned to their homes.

One child of 3 years, who was transferred to the New Haven Hospital, where he died.

Seventeen who, on November 30th, remained in the Home, making the total of forty-four received since January 1st.

(Carrying the account on to January 1st, we find the total number received since the law went into effect to be 52—an increase, since this report closed, of 10—3 girls under 6, and 7 boys.)

#### THE OPERATION OF THE LAW IN NEW HAVEN COUNTY.

The inquiries of members of the County Committee, resident in alms-house Towns, have shown that as a rule the law has been observed, four towns only have disregarded it, and received and retained children in their alms-houses among degraded adults.

In November, 1883, there were 43 children living upon public bounty in the New Haven alms-house—but as January 1st approached, when these children were likely, in accordance with law, to be transferred to the County Home—there was a sudden and great diminution in numbers; orphan asylums, which had considered themselves over-crowded, found that they could make room for a few more; churches came forward and claimed their own; and parents who in accordance with time-honored custom had gone into comfortable winter quarters in the alms-house with their children, found it quite possible to support themselves outside that Institution, when the alternative was separation from their children—and so in one way or another the alms-house population was materially lessened, simply by the moral effect

of the children's law—unfortunately that effect has not endured. One of the last acts of the late Legislature was the passage of a mischevious amendment to the law, permitting children to be placed in alms-houses for one month in each year provided that their parents, being of good moral character, accompany them, and there care for them. As might have been anticipated a most wholesome restraint is thus removed from vicious, idle parents, and as a result many mothers now entering alms-houses because of poverty induced by their hard drinking, are nevertheless considered of "good, moral character," and once inside the alms-house with their children, the limit of a month is easily lost sight of, and the old order of things is re-established to the injury of public morals, and the public purse. Further than this—the amendment has been stretched in its meaning to cover criminal cases, as for instance that of a woman sent to jail with her grown daughters, for gross immorality, while the younger girls of the family—sure to follow in the steps of their sisters—were taken to the alms-house that they might be kept out of the way of the protective operation of the children's law.

It is in these ways that the four towns above referred to have set aside the statute, and made it for the children coming under their charge, of no effect.

#### THE QUESTION OF EXPENSE.

In the commencement of this enterprise there has been of necessity, no small out-lay for repairs, furnishing, etc., etc. The work has been experimental for the first year. The committee of management see ways in which items of expense can be reduced in another year's accounts. So far as *town* out-lay is concerned, however, the cost will contrast favorably with the amount paid for the maintenance of the same numbers for the same time in any well-conducted alms-house in the county.

Take New Haven for example. In the annual statement of town expenses lately rendered, it appeared that \$826.36

have been paid by the town for board of children in the county Home up to October 31st.

During the time covered by the statement, thirty-three children from the town of New Haven have been cared for by the Board of Management of the County Home, either in the Home or in private families for an aggregate of 668 weeks. The town has consequently expended an average of \$ per cap. weekly for the support of those thirty-three children.

Or, state the case differently, nothing in the past history of alms-houses authorizes the belief that the thirteen children from the town of New Haven, placed in family homes from the County Home free of cost to the town, would have been promptly provided for in this way from an alms-house. On the contrary everything in the past leads to the conclusion that the majority of them would have remained till this time a burden upon society, and the town would have paid, at the lowest estimate, \$1.50 weekly for their support while in the alms-house.

These 13 children have already spent 323 weeks in family homes under the best conditions for becoming respectable members of society, a change to them and to society of vast importance; and for this the town has not been called upon to expend one penny, on the contrary, the town has been saved—at the above rate of \$1.50 weekly—for these 223 weeks, \$334.00, by the operation of the children's law.

It is well known that this is an understatement of the actual cost to tax-payers for alms-house support, and that by keeping these children out of this Institution a much larger sum than the above has been saved the town in these 223 weeks.

In November, 1883, there were found scattered in four alms-houses in this county, 10 children whose aggregated years of alms-house life amounted to 51. These Towns had already spent on these children, at the rate of \$1.50 weekly, \$3,998.00, *before they had reached their twelfth year.*

Three of these same towns are among the four which in this county have disregarded the childrens' law—and one of them at the present time farms out children to a person who



lives by running a private "Home," so called, conducted on a strictly economical basis, where children are received by the "job lot" at one dollar each per week.

Tax-payers are asked to consider whether on the whole this is a satisfactory way of investing even a small part of the public's money, and whether, in view of these things, it is not worth while to lend their influence for the support of the children's law.

### NEW LONDON COUNTY TEMPORARY HOME.

#### BOARD OF MANAGEMENT:

MESSRS. ELIJAH A. MORGAN,\* P. O. Mystic,  
 NATHAN H. AYER, " Norwich,  
 EDMUND SHEFFIELD, " Old Lyme,  
 County Commissioners.

Mrs. FRANCIS BACON, of the State Board of Charities,  
 P. O. New Haven.

Mr. C. A. LIPPITT,† of the State Board of Health,  
 P. O. New London.

#### TOWN COMMITTEES.

New London, Mr. George F. Tinker,	P. O. New London.
Norwich, Mrs. A. S. Carlisle,	" Norwich Town.
Bozrah, Mrs. S. W. Houghton,	" Bozrah.
Colchester, Mrs. S. G. Willard,	" Colchester.
East Lyme, Mrs. S. K. Luce,	" Niantic.
Franklin, Mrs. J. Owen Smith,	" Yantic.
Griswold, Mr. J. E. Leonard,	" Jewett City.
Groton, Mrs. Mary J. Ramsdell,	" Groton.
Lebanon, Mrs. J. M. Peckham,	" Bozrahville,
Ledyard, Mr. William T. Cook,	" Ledyard.
Lisbon, Mrs. Faith B. P. Reade,	" Jewett City.
Lyme, Mrs. James A. Bill,	" Lyme.
Mr. Frederick Fosdick,	" North Lyme.

\* President and Secretary.

† Deceased.

Montville, Mrs. R. G. Hooper,	P. O. Montville.
North Stonington, Mrs. D. W. Stewart,	“ N. Stonington.
Old Lyme, Mrs. Angeline Champion,	“ Lyme.
Preston, Mrs. Abby P. Sears,	“ Preston.
Salem, Mrs. Nelson N. Williams,	“ Salem.
Sprague, Mrs. Ethan Allen,	“ Hanover.
Stonington, Mrs. Eliza P. Noyes,	“ Stonington.
Voluntown, Mrs. Timothy Parker,	“ Voluntown.
Waterford, Mrs. William L. Peckham,	“ Waterford.
Mrs. Edmund Darrow,	“ Waterford.
Superintendent,	“

The following Report is furnished by the County Commissioners of New London County.

The “Home” is located in the town of Norwich, it being what is known as the “Starr Farm Mansion House,” belonging to B. W. Thompson, Esq., of Norwich, and on the highway leading from the Norwich Town meeting house to the East Great Plain School-house—about three-quarters of a mile from said school-house.

The house is large, of modern structure, with veranda, and well adapted to the required purpose. There is a good barn, carriage-house, and other buildings; the yard is large, set with evergreens; garden, small. The structure and general appearance are all that could be desired. The property is under a lease to the Board of Management for fifteen months and four days, to April 1, 1885, at a total rental of \$337.50, payable quarterly. The house is in charge of Mr. Josiah A. Brown and wife, at \$50.00 per month.

The Board of Management furnishes whatever is needed in the house, or about the premises, and receive the sum paid for the board of children. The children attend the district school of their neighborhood, which is near the “Home.” The charge for each child is one dollar and fifty cents per week, which includes clothing and medical attendance.

The “Home” was opened January 1, 1884. The first child was admitted April 16, 1884, and up to January 1, 1885, twenty-five children—seventeen boys and eight girls, of the

average age of seven years and fifteen days—were admitted, all of whom were committed to the “Home” by, and at the expense of the towns.

The following is a memoranda, kept at the “Home,” of children admitted up to January 1, 1885 :

- Boy, admitted April 16, 1884; age, 6 years; from Preston.
- Boy, admitted April 16, 1884; age, 4 years; from Preston.
- Boy, admitted April 16, 1884; age, 3 years; released May 1, 1884; from Norwich.
- Boy, admitted April 16, 1884; age, 6 years; released May 1, 1884; from Norwich.
- Girl, admitted April 25, 1884; age, 12 years; released June 5, 1884; from New London.
- Girl, admitted May 1, 1884; age, 5 years; released May 16, 1884; from New London.
- Boy, admitted May 1, 1884; age, 6 years; released June 10, 1884; from New London.
- Boy, admitted May 1, 1884; age, 8 years; released June 10, 1884; from New London.
- Girl, admitted June 3, 1884; age, 8 years; released June 13, 1884; came back Sept. 13, 1884; from New London.
- Boy, admitted June 3, 1884; age, 7 years; released June 20, 1884; came back Oct. 2, 1884; from Norwich.
- Boy, admitted June 3, 1884; age, 4 years; released Sept. 18, 1884; from New London.
- Boy, admitted June 3, 1884; age, 4 years; released Sept. 18, 1884; from New London.
- Girl, admitted July 17, 1884; age, 11 years; released Oct. 8, 1884; from Norwich.
- Boy, admitted July 17, 1884; age, 8 years; released Oct. 21, 1884; came back Nov. 1, 1884; from Norwich.
- Girl, admitted July 17, 1884; age, 5 years; released July 19, 1884; came back Aug. 3, 1884; released Nov. 8, 1884; from Norwich.
- Boy, admitted Aug. 12, 1884; age, 9 years; from New London.
- Boy, admitted Aug. 13, 1884; age, 9 years; released Oct. 2, 1884; from Norwich.
- Boy, admitted Sept. 12, 1884; age, 14 years; released Sept. 22, 1884; from Norwich.
- Girl, admitted Sept. 13, 1884; age, 9 years; from Norwich.
- Girl, admitted Sept. 13, 1884; age, 8 years; released Sept. 18, 1884; from New London.
- Boy, admitted Nov. 4, 1884; age, 6 years; from Norwich.
- Girl, admitted Nov. 7, 1884; age, 5 years; from East Lyme.
- Boy, admitted Nov. 7, 1884; age, 9 years; from East Lyme.
- Boy, admitted Dec. 18, 1884; age, 6 years; from Norwich.
- Boy, admitted Dec. 18, 1884; age, 4 years; from Norwich.

Of these twenty-five, twelve were American, seven Irish, five German, and one French. Ten of the twenty-five children—eight boys and two girls—remained in the “Home” January 1, 1885. The average of these eight boys at the date of admission was six years and six months; of the girls, seven years.

Eight of the twenty-five children—four boys of the average age of nine years and six months, and four girls of the average age of nine years—were released during the year to go into private homes, provided for them by the Board of Management, under and pursuant to the provisions of the law. Of the eight children, three were returned to the “Home,” after an average trial of two months and seven days. The other five still remain in the homes where they were placed. They have been rescued from poor-house conditions and associations, properly cared for in every respect, and so provided for *that they have ceased to be, and are not likely again to be, a charge upon their towns.*

These eight children together represent a period of  $205\frac{1}{7}$  weeks in charge of the Board of Management—in the “Home” and out of it—at a total cost to their towns of \$102.94, or about 51 cents per week for each child.

The grand lists of the four towns, which have sent children to the “Home,” amounted in November, 1883, to \$21,499,502. The sum paid by or due from these towns up to January 1, 1885, for the support of the twenty-five children at the “Temporary Home,” was \$394.96, which is a tax of  $\frac{137}{10000}$  of a mill on that grand list.

The grand lists of the two towns by which the eight children who were provided with private homes, were placed in the “Temporary Home,” amounted in November, 1883, to \$19,991,427; and their expenditure of \$102.94 on those eight children while at the “Home,” is a tax of a trifle over  $\frac{51}{10000}$  of a mill on that grand list.

The following is a financial statement of the “Home,” for the fiscal year ending January 1, 1885:



NEW LONDON COUNTY TEMPORARY HOME IN ACCOUNT WITH  
THE BOARD OF MANAGEMENT.

	CR.	
By cash from State appropriation, . . . . .	\$1,000.00	
By cash received and due from Towns, . . . . .	394.95	
By cash received from milk sold, . . . . .	1.48	
	<hr/>	\$1,396.44
	DR.	
To cash paid salary Superintendent and wife, . . . . .	\$600.00	
"    for rent, . . . . .	270.00	
"    pasturage, . . . . .	15.00	
"    provisions, . . . . .	314.27	
"    clothing and dry goods, . . . . .	118.58	
"    furniture, . . . . .	48.17	
"    medical attendance and drugs, . . . . .	10.35	
"    grain, hay and straw, . . . . .	102.36	
"    cow, . . . . .	40.00	
"    sewing machine, . . . . .	12.00	
"    carriage, . . . . .	75.00	
"    carpet, . . . . .	11.25	
"    cots and freight, . . . . .	34.14	
"    crockery, . . . . .	8.14	
"    hardware, stoves, etc., . . . . .	132.25	
"    coal and wood, . . . . .	54.25	
"    County Commissioners' expenses, . . . . .	170.46	
"    all other expenses, . . . . .	98.51	
	<hr/>	\$2,114.73
Balance of expenses over receipts, . . . . .		\$718.29

ASSETS AT THE "HOME" BELONGING TO COUNTY.

By furniture, . . . . .	\$48.17	
By cow, . . . . .	40.00	
By sewing machine, . . . . .	12.00	
By carriage, . . . . .	75.00	
By carpet, . . . . .	11.25	
By cots, . . . . .	33.30	
By crockery, . . . . .	8.14	
By hardware, stoves, etc., . . . . .	132.25	
	<hr/>	\$360.11
Balance of expenses over receipts and assets, . . . . .		\$358 18

The grand list of New London county amounted in Nov. 1883, to \$39,446,763; and the sum of \$358.18 which has thus far been expended upon the "Temporary Home" by the county is a tax of  $\frac{91}{10000}$  of a mill on that grand list.

The Board of Management believes that, as the law comes to be better understood and duly appreciated throughout the county, a larger number of children will be committed to the "Home," and its income thus increased. It is difficult to make a reliable estimate of the amount needed for the coming year, but the Board are of the opinion that the sum of \$1,500 raised by county tax, would be sufficient to meet the expenses.

All of which is respectfully submitted.

E. A. MORGAN, Chairman,

N. H. AYER,

CHAS. MCCHESNEY,

*County Commissioners.*

NORWICH, January 1, 1885.

#### FAIRFIELD COUNTY TEMPORARY HOME.

##### BOARD OF MANAGEMENT.

MESSRS. NATHAN M. BELDEN,\* P. O. Wilton.

CHARLES B. WHEELER, " Bridgeport,

JOHN O. PAGE,† " Danbury,

*County Commissioners.*

HARLOW P. HARRIS, of the State Board of Charities,  
P. O. Ore Hill.

C. A. LINDSLEY, M.D., of the State Board of Health.  
P. O. New Haven.

##### TOWN COMMITTEES.

Bridgeport,	{	Mrs. E. W. Maxey,	P. O. Bridgeport.
		Mrs. L. M. Middlebrook,	" "
		W. B. Beebe, M.D.,	" "
Danbury,		Mrs. M. L. Ward,	" Danbury.
Bethel,		Mrs. W. W. Sherman,	" Bethel.
Brookfield,		Miss Emily C. Hawley,	" Brookfi'd Cen'r.
Darien,		Miss Myra J. Davis,	" Darien.
Easton,		Miss Mary E. Seeley,	" Easton.

---

\* President.

† Secretary.

Fairfield, Mrs. Samuel Glover,	P. O. Fairfield.
Greenwich, L. P. Jones, M.D.,	" Greenwich.
Huntington, Mrs. D. W. Plumb,	" Birmingham.
Monroe, Mrs. John S. Stevens,	" Monroe.
New Canaan, Mrs. E. Van Hoosear,	" New Canaan.
New Fairfield, Mrs. R. A. C. Peffers,	" New Fairfield.
Newtown,	
Norwalk, Mr. Charles A. Burr,	" Norwalk.
Redding, Mrs. William J. Jennings,	" Redding.
Ridgefield, Mrs. L. W. Abbott,	" Ridgefield.
Sherman, Mrs. S. E. Hungerford,	" Sherman.
Stamford, Mrs. George A. Hoyt,	" Stamford.
Stratford, Mrs. William Nash,	" Stratford.
Trumbull, Seth Hill, M.D.,	" Stepney Depot.
Weston, Frank Gorham, M.D.,	" Westport.
Westport, Mrs. Frederick H. Nash,	" Westport.
Wilton, Miss Katherine A. Sturges,	" Wilton.

## MATRON OF THE HOME.

Mrs. M. A. Beers,

P. O. Stratford.

The Home, which is in Stratford, was opened January 1, 1884. The house is pleasantly and healthfully situated, is sufficient for the purpose, and is under lease to the board at an annual rental of \$265. The charge is two dollars a week for each child, including clothing and medical attendance. The children attend the district school.

The first child was admitted January 8, 1884, and, up to November 30, 1884, twenty-eight children, of the average age of six years, seven months, and twenty days, to wit, fifteen boys of the average age of six years, ten months, and twelve days, and thirteen girls of the average age of six years, four months, and eighteen days.

The following is the record, from memoranda kept at the Home, of children admitted up to November 30, 1884, numbers being substituted for the names of the children:

Number.	Age.	Admitted.	Released.	How Committed.
1, a girl	9 years	Jan. 8, 1884	May 16, 1884	By town of Bridgeport.
2, a girl	5 years	Jan. 8, 1884	Sept. 9, 1884	By town of Bridgeport.
3, a boy	4 years	Jan. 15, 1884		By town of Westport.
4, a boy	3 years	Jan. 15, 1884		By town of Westport.
5, a girl	8 years	Jan. 15, 1884	June 28, 1884	By City Court, Bridgeport.
6, a boy	12 years	Jan. 21, 1884	Feb. 27, 1884	By town of Newtown.
7, a girl	4 years	Jan. 21, 1884		By town of Newtown.
8, a girl	5 years	Feb. 23, 1884		By City Court, Bridgeport.
9, a boy	6 years	Feb. 23, 1884		By City Court, Bridgeport.
10, a boy	10 years	Feb. 28, 1884	Apr. 1, 1884	By town of Bridgeport.
11, a boy	8 years	Feb. 28, 1884	June 6, 1884	By town of Bridgeport.
12, a girl	8 years	Mch. 1, 1884	Apr. 30, 1884	By town of Stamford.
13, a girl	5 years	Mch. 1, 1884	Apr. 30, 1884	By town of Stamford.
14, a boy	12 years	Mch. 17, 1884	Apr. 30, 1884	By City Court, Bridgeport.
15, a boy	4 years	Apr. 19, 1884		By City Court, Bridgeport.
16, a girl	7 years	June 2, 1884	Sept. 29, 1884	By town of Bridgeport.
17, a boy	5 years	June 2, 1884	Sept. 29, 1884	By town of Bridgeport.
18, a boy	2 years	June 2, 1884	Sept. 29, 1884	By town of Bridgeport.
19, a girl	9 years	June 11, 1884	Oct. 22, 1884	By town of Bridgeport.
20, a girl	8 years	June 11, 1884	Oct. 22, 1884	By town of Bridgeport.
21, a boy	6 years	June 11, 1884	Oct. 22, 1884	By town of Bridgeport.
22, a girl	4 years	June 11, 1884	Oct. 22, 1884	By town of Bridgeport.
23, a girl	5 years	Aug. 2, 1884	Sept. 30, 1884	By Miss Quintard, Norwalk.
24, a boy	10 years	Aug. 15, 1884		By his mother, (Bridgeport.)
25, a boy	9 years	Aug. 16, 1884	Sept. 15, 1884	By City Court, Bridgeport.
26, a girl	6 years	Aug. 16, 1884	Sept. 15, 1884	By City Court, Bridgeport.
27, a boy	6 years	Aug. 22, 1884	Sept. 16, 1884	By town of Bridgeport.
28, a boy	6 years	Aug. 22, 1884	Sept. 16, 1884	By town of Bridgeport.

Nine of the twenty-eight children admitted were not chargeable to towns, but were placed in the Home as follows, to wit: by and at the expense of private persons, one boy and one girl; and by the City Court of Bridgeport, four boys and three girls. Of the children placed there by private persons, the boy remained there on November 30th last, and the girl had been withdrawn by the person who placed her there. Of the children committed by the City Court of Bridgeport, three—two girls and a boy—had been released to their parents before the last-named date; one boy had been provided with a private home by the Board of Management, and three—one girl and two boys—remained in the Home.

Nineteen of the twenty-eight children admitted, to wit: ten boys of the average age of 6 years, 2 months, and 12



days, and nine girls of the average age of 6 years, 6 months, and 20 days, were placed in the Home by and at the expense of towns; and of the nineteen, three—two boys and one girl—remained there on November 30th last.

Of the sixteen children supported by towns, who had been taken from the Home on or before November 30, 1884, seven had been returned to their parents, two had been withdrawn by selectmen, and seven had been provided with private homes by the Board of Management under and pursuant to the provisions of the law, and thus removed from the poor lists of their towns.

Twenty-one of the twenty-eight children admitted had been released before November 30th last. Of these children, eight had been placed in private homes prior to November 30, 1884. They were, taken together, in the Home a total of 83 1-7 weeks, or an average of 10 3-8 weeks each, at an expense of \$166.28, or an average of \$20.78 per child. They had, up to November 30, 1884, been out of the Home and in private families, where they cost their towns nothing, a total of 217 6-7 weeks. They have, therefore, under the care of the Board of Management, been in the Home and in private families, up to the last-named date, a total of 301 weeks, at an average expense of 55 9-10 cents per child. And by that expenditure they have, through the agency of the Home, been removed—the girls had been removed before that date, as follows: three girls to self-supporting relatives, one boy to the Reform School, and four boys and five girls to good private homes, in which they cost their towns nothing, provided by the Board of Management under and pursuant to the provisions of the law.

These eight children came from three towns in the county. The grand lists of these towns amounted, in 1882, to \$21,705,299, on which sum the amount expended on those children in the Temporary Home—\$166.78—is a tax of seventy-six ten-thousandths ( $\frac{76}{10000}$ ) of a mill.

The following is the financial statement of the Home from its opening to November 30, 1884—eleven months:

## FAIRFIELD COUNTY TEMPORARY HOME

*in account with* BOARD OF MANAGEMENT.

January 1, 1884, to November 30, 1884.

*Cr.*

By State appropriation, . . . . .	\$1,000.00
By cash from towns for board of children, . . . . .	440.56
By cash due from towns and State, . . . . .	623.13
By cash from grass sold, . . . . .	7.00
	<hr/>
	\$2,070.69

*Dr.*

To cash paid for rent, . . . . .	\$242.92
To cash paid for repairs, . . . . .	95.67
To cash paid for transportation and furniture, . . . . .	635.69
To cash paid for provisions, . . . . .	513.04
To cash paid for fuel, . . . . .	76.50
To cash paid for matron and help, . . . . .	498.83
To cash paid for clothing, . . . . .	38.55
To cash paid for medical attendance and medicines, . . . . .	19.20
To cash paid for sundries, . . . . .	26.34
	<hr/>
	\$2,146.74
Cash expenses over cash receipts, . . . . .	\$ 76.05
Assets at Home belonging to County, . . . . .	500.00
	<hr/>
Assets and receipts over expenses, . . . . .	\$423.95

It will be seen that the Home has not thus far cost the County of Fairfield anything. The expenses of matron and help have been very much reduced since September 30th, and the outlay for furniture and repairs substantially covers the coming as well as the past year. It is the belief of the Board of Management that the expenses for the ensuing year will not exceed \$1,000, which sum would be a tax of one hundred and eighty-two ten-thousandths ( $\frac{182}{10000}$ ) of a mill on the grand list of the County for 1882—\$53,508,928.

## WINDHAM COUNTY TEMPORARY HOME.

## Board of Management :

Messrs. J. D. CONVERSE,\* Thompson,  
 A. A. STANTON, Sterling,  
 E. H. HALL, JR., North Windham,  
 County Commissioners.

HENRY E. BURTON, of the State Board of Charities,  
 P. O. Hartford.  
 A. C. LIPPITT,† of the State Board of Health,  
 P. O. New London.

## TOWN COMMITTEES.

Brooklyn, Mrs. Frank E. Baker,	P. O. Brooklyn.
Ashford, Mrs. Davis Baker,	" Ashford.
Canterbury, Mrs. Marvin H. Sanger,	" Canterbury.
Chaplin, Mrs. Mary Utley,†	" Chaplin.
Eastford, Mrs. Timothy Walker,	" Eastford.
Hampton, Mrs. John Tweedy,	" Hampton.
Killingly, Miss Mary Dexter,	" Danielsonville.
Plainfield, Mrs. J. J. Penrose,	" Central Village.
Pomfret, Mrs. Darius M. Adams,	" Putnam.
Putnam, Mrs. James Gardner,	" Putnam.
Scotland, Mrs. Charles Brown,	" Scotland.
Sterling, Mrs. Ellen O. Wedge,	" Sterling.
Thompson, Mrs. Elijah Crosby,	" Thompson.
Windham, Miss Annie C. Tingley,	" Willimantic.
Woodstock, Mrs. J. R. Barber,	" Woodstock.

## MATRON OF THE HOME.

Mrs. Henry O. Preston, P. O. Putnam Heights.

The Home is at Putnam Heights, about three miles from the railroad station at Putnam, and is pleasantly and healthfully located. The house is desirable and sufficient for the purpose. It is occupied by the owner and his wife, Mr. and Mrs. Preston, who are in charge of the Home ; and, with the

\* President.

† Deceased.

farm attached, is under lease to the Board of Management for \$800 per year, which sum includes the services of the owner and his wife, the use of the live stock (three cows and a horse), and the products of the farm, which the owner is to work. The furniture of the owner goes with the premises, and is used in the service of the Home; and the Board of Management supply such additional furniture as may be needed. The Board of Management furnish whatever help is needed in the house or upon the farm, and receive the sums paid for the board of children.

The children attend the district school of their neighborhood, which is near the Home.

The charge for each child is two dollars per week, which includes clothing and medical attendance.

The Home was opened November 1, 1883. The first child was admitted November 20, 1883; and, up to November 30, 1884, fourteen children—ten boys and four girls of the average age of 6 years, 5 months, and 22 days—were admitted, all of whom were committed to the Home by, and at the expense of, towns.

The following is the record, from memoranda kept at the Home, of children admitted, and released to go into private homes up to November 30, 1884, numbers being substituted for the names of the children:

Number.	Admitted.	Age at Admission.			National- ity.	Released.	From What Town.
		Y'rs.	Mos.	D'ys.			
1, a boy	Nov. 20, '83	9	9	21	Amer.	Mch. 4, '84	Thompson
2, a boy	Nov. 20, '83	5	9	20	Amer.	.....	Thompson
3, a boy	Nov. 20, '83	3	10	20	Amer.	.....	Thompson
4, a girl	Dec. 30, '83	2	—	10	Amer.	May 2, '84	Thompson
5, a boy	Aug. 28, '84	7	6	4	Amer.	Sept. 19, '84	Thompson
6, a boy	Apr. 11, '84	3	9	29	Amer.	.....	Woodstock
7, a boy	Nov. 30, '83	1	11	30	Amer.	Feb. 19, '84	Pomfret
8, a boy	Nov. 30, '83	9	—	—	Amer.	.....	Pomfret
9, a girl	Mch. 13, '84	6	6	4	Amer.	.....	Pomfret
10, a boy	Mch. 13, '84	4	8	—	Amer.	.....	Pomfret
11, a girl	Nov. 8, '84	13	—	—	French	Nov. 13, '84	Putnam
12, a girl	Sept. 20, '84	9	—	—	Irish	Sept. 30, '84	Killingly
13, a boy	Dec. 3, '83	11	8	—	Colored	Feb. 19, '84	Brooklyn
14, a boy	Jan. 19, '84	1	11	24	Amer.	June 17, '84	Windham

Six of the fourteen children—five boys and one girl—remained in the Home on November 30, 1884. The average



age of these five boys, at the date of admission, was 5 years and 5 months. The girl was 6 years, 6 months, and 4 days old when admitted. She is not full-witted, and arrangements have been made for sending her to the Connecticut School for Imbeciles.

Eight of the fourteen children—five boys of the average age of 6 years, 7 months and 3 days, and three girls of the average age of 8 years and 3 days—were released during the year to go into private homes, provided for them by the Board of Management, under and pursuant to the provisions of the law.

The total stay of these eight children in the Home was 82 weeks; and the total cost of such stay, to their towns, was \$164. Their average stay in the Home was  $10\frac{1}{4}$  weeks each, at an average expense to their towns of \$20.50 for each child. On November 30, 1884, they had been out of the Home, through its agency, and off the poor lists of their towns, an average of  $24\frac{3}{10}$  weeks, or a total of  $195\frac{14}{10}$  weeks.

They have all remained in the private homes in which they were placed, except one boy, long an inmate of a poor-house, who was found to be hopelessly incorrigible, and was sent to the Reform School.

These eight children together represent a period of  $277\frac{14}{10}$  weeks in charge of the Board of Management, in the Home and out of it, at a total cost to their towns of \$164; or  $59\frac{1}{5}$  cents per week for each child, and they have been rescued from poor-house conditions and associations, properly cared for in every respect, and so provided for that *they have long since ceased to be, and are not likely again to be, a charge upon their towns.*

The grand lists of the seven towns which have sent children to the Home amounted, in 1882, to \$13,487,874. The sum paid by, or due from, these towns, up to November 30, 1884, for the support of the fourteen children at the Temporary Home, was \$700.51, which is a tax of five hundred and nineteen ten thousandths ( $\frac{519}{10000}$ ) of a mill on that grand list.

The grand lists of the six towns by which the eight children, who have been provided with private homes, were

placed in the Temporary Home, amounted, in 1882, to \$12,-505,491; and their expenditure of \$164 on those eight children while at the Home is a tax of one hundred and thirty-four ten thousandths ( $\frac{134}{10000}$ ) of a mill on that grand list.

The following is the financial statement of the Home for the fiscal year ending November 30, 1884:

## WINDHAM COUNTY TEMPORARY HOME

*in account with* BOARD OF MANAGEMENT.

*Cr.*

By cash on hand from State appropriation, November 30, 1883, . . . . .	\$596.55
By cash received from towns for support of children, . . . . .	591.03
By cash due from towns for support of children, . . . . .	103.68
By cash received from produce sold, . . . . .	264.45
By cash received from sale of cots, . . . . .	32.50
	<hr/>
	\$1,588.21

*Dr.*

To cash paid for salaries of superintend- ent and wife, . . . . .	\$600.00
To cash paid for rent of farm, . . . . .	200.00
To cash paid for hired girl, . . . . .	143.44
To cash paid for labor on farm, . . . . .	164.79
To cash paid for provisions, . . . . .	223.57
To cash paid for clothing, . . . . .	78.22
To cash paid for furniture, . . . . .	79.69
To cash paid for medical attendance, . . . . .	40.75
To cash paid for rent of telephone, . . . . .	49.60
To cash paid for grain, . . . . .	118.79
To cash paid for fertilizer, . . . . .	39.00
To cash paid for cow, . . . . .	50.00
To cash paid for County Commissioners' expenses, . . . . .	105.93
To cash paid for all other expenses, . . . . .	203.87
	<hr/>
	\$2,096.65

Balance of expenses over receipts,	.	.	\$508.44
Assets at Home belonging to County,	.	.	303.68
Balance of expenses over receipts and assets,			<u>\$204.76</u>

The grand list of Windham County amounted, in 1882, to \$17,629,958; and the sum of \$204.76, which the County has thus far expended upon the Temporary Home, is a tax of one hundred and seventeen ten thousandth ( $\frac{117}{100000}$ ) of a mill on that grand list.

The Board of Management believe that, as the law comes to be better understood and duly appreciated throughout the County, in which direction marked advance has been made during the last year, a larger number of children will be committed to the Home; and that, while its income is thus increased, arrangements can be made to reduce its yearly expenses by some hundreds of dollars.

#### LITCHFIELD COUNTY TEMPORARY HOME.

##### Board of Management:

Messrs. LYMAN DUNNING,*	P. O. East Canaan,
BENNETT A. SHERMAN,	“ Woodbury,
FREDERICK E. HURLBUT,	“ Goshen,
	County Commissioners.

† Col. HARLOW P. HARRIS, of the State Board of Charities,  
P. O. Ore Hill.

‡ C. W. CHAMBERLAIN, M.D., of the State Board of Health,  
P. O. Hartford.

##### TOWN COMMITTEES.

Litchfield,	{	Mrs. D. D. T. McLaughlin, P. O. Litchfield.
	{	Mrs. George M. Woodruff, “ “
Barkhamsted,		Mrs. E. J. Youngs, “ Pleasant Valley.
Bethlehem,		Miss Alice E. Bird, “ Bethlehem.
Bridgewater,		Mrs. Harmon Treat, “ Bridgewater.
Canaan,		Mrs. Ellen E. Manley, “ Falls Village.

\* President.

† Secretary.

‡ Deceased.

Colebrook, Miss Elizabeth Rockwell,	P. O. Colebrook.
Cornwall, Mrs. D. W. Ives,	" West Cornwall.
Goshen, Miss Sarah B. Norton,	" Goshen.
Harwinton, { Mrs. Abijah Catlin,	" Harwinton.
{ Mrs. Willis Catlin,	" "
Kent, Mrs. Jeremiah Fuller,	" Kent.
Morris, Mrs. Theron H. Page,	" Morris.
New Hartford, Mrs. John Richards,	" New Hartford.
New Milford, Mrs. M. A. Stone,	" New Milford.
North Canaan, Miss Sarah W. Adam,	" Canaan.
Norfolk, Miss Alice B. Eldredge,	" Norfolk.
Plymouth, Mrs. George Langdon,	" Plymouth.
Roxbury, Aaron W. Fenn, M.D.,	" Roxbury.
Salisbury, Mrs. H. P. Harris,	" Ore Hill.
Sharon, Miss Caroline S. Roberts,	" Sharon.
Thomaston, { Mrs. Israel B. Woodward,	" Thomaston.
{ Mrs. A. P. Bradstreet,	" "
Torrington, Mrs. Sarah C. Lathrop,	" Torrington.
Warren, Mrs. W. S. Colton,	" Warren.
Washington, Mrs. Mary E. Kinney,	" Romford.
Watertown, Mrs. W. S. Munger,	" Watertown.
Winchester, { Mrs. Rose Terry Cooke,	" Winsted.
{ Miss Mary P. Hinsdale,	" West Winsted.
Woodbury, Mrs. John T. Ward,	" Hotchkissville.

## SUPERINTENDENT.

Tallmadge Pulver, P. O. East Canaan.

The Home was opened October 1, 1883. It is now in North Canaan, about three-fourths of a mile from the station of East Canaan, on the Connecticut Western railroad. It is a comfortable and well furnished house, sufficient in size, and well arranged for the purpose.

The children attend the district school of the neighborhood.

The charge for each child is two dollars per week, including clothing and medical attendance.

The following is the record of children admitted to the



Home up to November 30, 1884, numbers being substituted for the names of the children :

Number.	Age.	Admitted.	Nation- ality.	Released.	How Committed.
1, a boy	10 y'rs	Oct. 14, 1883	Amer.	Apr. 24, 1884	By town of N. Milford.
2, a boy	5 y'rs	Oct. 14, 1883	Amer.		" "
3, a girl	11 y'rs	Apr. 17, 1884	Amer.	June 25, 1884	" "
4, a girl	10 y'rs	Nov. 20, 1883	Colored	Apr. 24, 1884	" Colebrook.
5, a girl	8 y'rs	Nov. 20, 1883	Colored	June 25, 1884	" "
6, a girl	12 y'rs	Apr. 25, 1884	Colored	June 16, 1884	" "
7, a boy	9 y'rs	Dec. 17, 1883	Amer.	Jan. 19, 1884	" Washington.
8, a boy	8 y'rs	Feb. 7, 1884	English	June 25, 1884	" "
9, a girl	2 y'rs	July 31, 1884	Swede.	Oct. 20, 1884	" "
10, a girl	12 y'rs	Aug. 11, 1884	Amer.	Sept. 12, 1884	" Watertown.
11, a boy	10 y'rs	Aug. 11, 1884	Amer.		" "
12, a girl	9 y'rs	Aug. 11, 1884	Amer.	Oct. 13, 1884	" "
13, a boy	8 y'rs	Aug. 11, 1884	Amer.		" "
14, a boy	6 y'rs	Aug. 11, 1884	Amer.		" "
15, a girl	4 y'rs	Aug. 11, 1884	Amer.		" "
16, a boy	2 y'rs	Aug. 11, 1884	Amer.		" "
17, a boy	11 y'rs	Aug. 14, 1884	Colored		" Torrington.
18, a boy	3 y'rs	Apr. 24, 1884	Amer.		Miss Alice B. Eldredge

The first child was admitted to the Home October 14, 1883; and up to November 30, 1884, eighteen children, of the average age of seven years nine months and ten days, to wit: ten boys, of the average age of seven years, two months and twelve days; and eight girls, of the average age of eight years and six months, were admitted.

They were all committed to the Home by and at the expense of towns, except one boy, No. 18 in above table, who is now supported there by Miss Eldredge of Norfolk.

Nine of the eighteen children admitted were in the Home on November 30, 1884; eight of whom, to wit: Nos. 2, 11, 13, 14, 15, 16, 17, and 18 in above table, have been in the Home continuously since their respective dates of admission, and one of whom, to wit, No. 8, was put into a private home June 25, 1884, and was returned to the Temporary Home August 16, 1884, for reasons satisfactory to the Board.

Of the eighteen children admitted, nine, to wit: two boys, aged, respectively, ten years and nine years, and seven girls, aged, respectively, eleven years, ten years, eight years, twelve years, two years, twelve years, and nine years,—Nos. 1, 3, 4,

5, 6, 7, 9, 10, and 12, in above table—have already been provided with private homes, in which they have remained since the respective dates of their discharge from the Temporary Home.

The nine children who have been placed in private homes were, taken together, in the Temporary Home a total of 127 weeks and 5 days, at a total expense to their towns of \$255.45, or an average of 14 weeks and  $1\frac{1}{2}$  days each, at an average expense to their towns of \$28.38 $\frac{1}{2}$  for each child.

They have, taken together, been out of the Home, in private families, up to November 30, 1884, a total of 200 weeks and 6 days—an average of 22 weeks and  $2\frac{2}{3}$  days for each child.

They therefore, together, represent a period of 328 weeks and 4 days, under charge of the Board of Management, in the Home or in private families, up to November 30, 1884, at a total cost to their towns, for such period, of \$255.45, or an average of  $77\frac{7}{10}$  cents per week for each child, including clothing and medical attendance.

And that expenditure has given them private homes, under and pursuant to the provisions of the law, in which they still remain, and have, from the respective dates of their discharge from the Home, ceased to be, and are not likely again to be, a charge upon their towns.

Among the nine children thus placed in private homes, are three—two girls and one boy—who had, together, according to investigations made in the fall of 1883, been in the poor-houses of their towns, a total of twelve years, or 624 weeks. They were in the Temporary Home a total of eighty and four-sevenths weeks, and have, through its agencies, been off from the poor lists of their towns, in proper private homes, where they have been and can remain without expense to their towns, a total of eighty-five and three-seventh weeks.

Eighty weeks and four days in the Home, at an expense to their towns of \$161.16, removed these three children from the poor lists of their towns, rescued them from the poor-house conditions and associations, gave them good family homes, and put them on the way to self-respecting and self-supporting manhood and womanhood.

We have not data as to the poor-house residence, if any, of the other six children who have been provided with private homes.

The grand lists of the four towns which have paid \$255.45, as hereinbefore set forth, for the support in the Home of the nine children who have been placed in private homes, amounted, in 1882, to \$4,930,859; on which sum \$255.45, is a tax of five hundred and twenty-one ten-thousandths ( $\frac{521}{10000}$ ) of a mill.

The following is the financial statement of the Home from its opening, October 1, 1883, to November 30, 1884—fourteen months:

LITCHFIELD COUNTY TEMPORARY HOME IN ACCOUNT WITH  
BOARD OF MANAGEMENT.

October 1, 1883, to November 30, 1884.

*Cr.*

By State appropriation, 1883, . . .	\$1,000.00	
By cash received for board of children, . . .	463.16	
By cash due for board of children, . . .	137.85	
	<hr/>	\$1,601.01

*Dr.*

To cash paid October 1, 1883, to November 30, 1883, . . . . .	\$279.73	
To cash paid E. T. Brewer, rent and salary, . . . . .	343.75	
To cash paid E. T. Brewer, and T. Pulver, for board of children, . . .	601.01	
To cash paid for clothing of children, . . .	155.13	
To cash paid for services of County Commissioners, . . . . .	107.35	
To cash paid for sundries, . . . . .	41.30	
	<hr/>	\$1,528.27
To balance of account unexpended, . . .		72.74
		<hr/>
		\$1,601.01

Total expenses for fiscal year ending	
November 30, 1884, . . . .	\$1,248.54
Receipts for board of children, . . .	\$463.16
Due for board of children, . . . :	137.85
	<u>          </u>
	\$601.01
Net expenses for fiscal year, . . .	\$647.53
Furniture on hand, . . . . .	\$84.80
Balance unexpended, . . . . .	72.74
	<u>          </u>
Assets, November 30, 1884, . . .	\$157.54

The grand list of the County of Litchfield amounted, in 1882, to \$26,479,259, and up to November 30, 1884, the Home has cost the county nothing; but, if the net expenses of the fiscal year of 1885 should be the same as those of the fiscal year of 1884, to wit, \$647.53, they would be a tax of two hundred and forty-five ten-thousandths ( $\frac{245}{10000}$ ) of a mill on that grand list.

It is believed however that, under existing arrangements, the net expenses of the Home for the fiscal year ending November 30, 1885, will be smaller than those of the fiscal year ending November 30, 1884.

#### MIDDLESEX COUNTY TEMPORARY HOME.

##### BOARD OF MANAGEMENT:

Messrs. DELOS D. BROWN,\* P. O. East Hampton,  
ELIAS W. WELLMAN,† “ Clinton,  
SILAS R. HOLMES,‡ “ Hadlyme,  
County Commissioners.

Mr. HENRY E. BURTON, of the State Board of Charities,  
P. O. Hartford.  
GROVE H. WILSON, M.D., of the State Board of Health,  
P. O. Meriden.

---

\* President.

† Treasurer.

‡ Secretary.



## TOWN COMMITTEES.

Middletown,	Mrs. Henry Ward,	P. O., Middletown.
"	Mrs. J. H. Bunce,	" "
Haddam,	Mrs. Charles T. Russell,	" Haddam.
"	Miss Hannah M. Walkley,	" Higganum.
Chatham,	Mrs. Adeline M. Tibbals,	" Cobalt.
"	Mrs. William H. Bevin,	" East Hampton.
Chester,	Mrs. Joseph E. Silliman,	" Chester.
Clinton,	Mrs. George E. Elliot,	" Clinton.
"	Miss Marietta W. Hull,	" "
Cromwell,	§Mrs. Myron S. Dudley,	" Cromwell.
Durham,	Miss Amelia Mathewson,	" Durham.
East Haddam,	Mrs. E. W. Chaffee,	" Moodus.
"	Mrs. William A. Cone,	" East Haddam.
Essex,	Mrs. C. H. Hubbard,	" Essex.
Killingworth,	Mrs. Nathan H. Evarts,	" Killingworth.
Middlefield,	Miss Mary E. Lyman,	" Middlefield.
Old Saybrook,	Mrs. J. H. Granniss,	" Saybrook.
Portland,	Mrs. J. S. Bayne,	" Portland.
"	Mrs. E. L. Sears,	" "
Saybrook,	Mrs. Milon Pratt,	" Deep River.
Westbrook,	Mrs. H. T. Wilcox,	" Westbrook.

## MATRON.

Mrs. H. ADAMS,

P. O. Higganum.

The Home is at Walkley Hill, about one mile and a half from the stations of Haddam or Higganum, on the Connecticut Valley Railroad. It was opened in Middletown, September 10, 1883, and was removed to Walkley Hill in April last. The house is comfortable, and large enough for its purpose at present, and is held at an annual rental of seventy-five dollars.

The children attend the district school of the neighborhood, which is near the Home.

The charge for each child is one dollar and fifty cents per week, exclusive of clothing and medical attendance.

The following is the record of children admitted to the Home, up to November 30, 1884, numbers being substituted for the names of the children:—

Number.	Age. Yr. Mo.	Admitted.	Released.	Nation- ality.	How Committed.
1, a boy	10,	Sept. 10, 1883	May 8, 1884	Amer.	By town of Middlet'n.
2, a girl	13,	Sept. 10, 1883	Sept. 27, 1883	Amer.	" private person.
3, a girl	9, 6	Sept. 10, 1883	Gone.	Amer.	" town of Middlet'n.
4, a boy	5, 6	Sept. 10, 1883		Amer.	" " "
5, a boy	5, 6	Sept. 10, 1883		Amer.	" " Durham.
6, a boy	6, 11	Sept. 10, 1883		Amer.	" " Middlet'n.
7, a girl	4, 3	Sept. 10, 1883		Amer.	" her father.
8, a boy	5,	Sept. 10, 1883		Colored	" his mother.
9, a boy		Sept. 10, 1883	Nov. 23, 1883	Germ'n	" his father.
10, a boy		Sept. 10, 1883	Nov. 23, 1883	Germ'n	" " "
11, a girl	5, 9	Sept. 10, 1883	Apr. 10, 1883	Amer.	" town of Middlet'n.
12, a boy		Sept. 10, 1883	Oct. 5, 1883	Amer.	" " "
13, a boy	10, 7	Sept. 10, 1883	Mch. 18, 1883	Amer.	" his father.
14, a boy	6, 11	Sept. 10, 1883	Mch. 18, 1883	Amer.	" " "
15, a girl	14,	Sept. 10, 1883	Oct. 2, 1883	Amer.	" private person.
16, a girl	13, 11	Sept. 10, 1883	Dec. 9, 1883	Amer.	" her mother.
17, a girl	9,	Sept. 10, 1883	Gone.	Amer.	" " "
18, a boy	6,	Sept. 10, 1883	Dec. 9, 1883	Amer.	" his mother.
19, a boy	4, 7	Sept. 10, 1883	Dec. 9, 1883	Amer.	" " "
20, a boy	4, 1	Oct. 20, 1883		Amer.	" town of E. Had'm.
21, a girl	6, 5	Oct. 20, 1883	Dec. 4, 1883	Amer.	" " "
22, a boy	3,	Sept. 10, 1883	Oct. 11, 1883	Amer.	" his mother.
23, a boy	9,	Oct. 3, 1883	Mch. 20, 1884	Swede.	" town of Portland.
24, a girl	6,	Oct. 3, 1883	April, 1884	Swede.	" " "
25, a boy	7,	Oct. 3, 1883		Swede.	" " "
26, a boy	6,	Oct. 3, 1883		Amer.	" " "
27, a boy		Oct. 3, 1883	Mch. 23, 1884	Amer.	" " "
28, a boy	11,	Oct. 3, 1883		Amer.	" " "
29, a boy	15,	Oct. 3, 1883	Gone.	Amer.	" " "
30, a girl	8, 3	Dec. 4, 1883	Feb. 11, 1884	Irish	" " Middlet'n.
31, a girl	5, 6	Dec. 4, 1883	Feb. 11, 1884	Irish	" " "
32, a boy	12, 9	Dec. 6, 1883		Amer.	" " "
33, a girl	12,	Dec. 12, 1883	Apr. 1, 1884	Irish	" her mother.
34, a boy		Dec. 19, 1883	Aug. 31, 1884	Amer.	" his father.
35, a girl	5, 6	Feb. 1, 1884	Mch. 4, 1884	Amer.	" town of Durham.
36, a boy	7,	Feb. 1, 1884		Amer.	" " "
37, a girl	6,	Feb. 1, 1884	Mch. 6, 1884	Amer.	" " "
38, a boy		May 19, 1884		English	" his father.
39, a girl	1,	Mch. 1, 1884		Amer.	" her mother.
40, a girl	12,			Amer.	" " "

Up to November 30, 1884, forty children were admitted, to wit: twenty-four boys and sixteen girls: fourteen of these children—eleven boys and three girls remained in the Home on that date; and twenty-six of them—thirteen boys and thirteen girls had been released before that date.

Of the forty children admitted, eighteen—ten boys and eight girls—were placed in the Home by and at the expense of private persons; of these eighteen, thirteen—eight boys and five girls—were released—ten to self-supporting relatives, and three, all girls, to private homes provided by the Board of Management—before November 30, 1884; and five—three girls and two boys—remained in the Home on that date; two of the girls so remaining being the children of women employed in the Home, and kept there at their expense, the third girl being supported there by her father, and one boy by his father, the other boy by his mother.

It will be observed that five of the fourteen children remaining in the Home on November 30th, last, were supported there by their parents.

Twenty-two of the forty children admitted—fourteen boys and eight girls—were placed in the Home by and at the expense of towns; of these twenty-two, nine, all boys, remained there on November 30th, last; and thirteen—five boys and all from the poor lists, and so provided for that they are not likely to cost their towns anything hereafter.

Omitting the boy who was sent to the Reform School, who had previously been in several private homes provided by the Board of Management, without cost to the town, the other twelve town children released as above stated, were, taken together, in the Home a total of 133 7-12 weeks, or an average of 11 1-7 weeks each, at a total expense to their towns of \$200.37, or an average of \$16.70 per child. They had, up to November 30, 1884, been out of the Home, in private families, where they cost their towns nothing, a total of 453 weeks. They have therefore, under the care of the Board of Management, been in the Home and in private families, up to the last named date, a total of 586 7-12 weeks, at an average expense to their towns of 34 2-10 cents per week for each child. And by that expenditure they have, through the agency of the Home, been removed from the poor lists and so provided for that they are not likely to cost their towns anything hereafter.

Of the town children released, the boy sent to the Reform

School had been more than three years in a poor-house before coming to the Home, and one boy and one girl, aged respectively nine years and six years, had been in a poor-house eight months each. Others of these children had been in poor-houses, but we have no data as to the time they remained in them. However, the three children, in respect to whose poor-house residence the above facts are given, together represent a poor-house residence of at least two hundred and twenty weeks—that is to say, the poor-house residence of these three children was eighty-six weeks longer than the residence in the Temporary Home of all the twelve town children who have gone into private homes. These twelve children came from four towns in the county. The grand lists of those towns amounted in 1882 to \$12,212,405, on which sum the amount expended on those children in the Temporary Home—\$200.37—is a tax of one hundred and sixty-three ten-thousandths ( $\frac{163}{100000}$ ) of a mill.

The following is the financial statement of the Home from its opening to November 30, 1884—nearly fifteen months:—

#### MIDDLESEX COUNTY TEMPORARY HOME

*In account with* BOARD OF MANAGEMENT :

September 10, 1883, to November 30, 1884.

<i>Cr.</i>		
By State appropriation,	.	\$1,000.00
“ cash paid for board of children,	.	1,065.00
“ “ due “ “	.	164.50
		<hr/>
		\$2,229.50
<i>Dr.</i>		
To cash paid for rent,	.	\$ 175.00
“ “ fuel,	.	101.00
“ “ repairs,	.	306.23
“ “ furniture,	.	358.63
“ “ provisions,	.	1,743.85
“ “ matron and help,	.	524.87
“ “ telephone,	.	7.50
“ “ sundries,	.	68.98
		<hr/>
		\$3,286.06



Cash expenses over cash receipts,	.	.	\$1,056.56
Assets at the Home belonging to county,	.	.	500.00
Expenses over receipts and assets,	.	.	<u>\$500.56</u>

The grand list of the county of Middlesex amounted in 1882 to \$19,384,657, and the sum of \$556.56 is a tax of two hundred and eighty-two ten thousandths ( $\frac{282}{10000}$ ) of a mill on that grand list.

The items of rent and repairs were larger than they would have been had it not been necessary for the Board to assume the lease of the premises occupied in Middletown until last April, and to repair the same for the winter of 1883-4, and to make alterations and repairs in the house now occupied at Walkley Hill. It will not be necessary to buy furniture for some time to come, and the expenses for provisions, matron, and help have been properly reduced. It is the belief of the Board that the net expenses anticipated for the fiscal year of 1885 can not reach \$1,000, and may not exceed \$600; and that the present county tax need not be increased in order to meet the expenses of the Home.

### TOLLAND COUNTY TEMPORARY HOME.

#### BOARD OF MANAGEMENT.

MESSRS. JOSEPH W. CHANDLER,\* P. O. Stafford Springs.

EDWIN G. SUMNER,† “ Mansf'd Cent'r.

CHARLES H. LOOMIS, “ Andover.

County Commissioners.

MRS. VIRGINIA T. SMITH, of State Board of Charities,

P. O. Hartford,

‡ C. W. CHAMBERLAIN, M.D., of State Board of Health,

P. O. Hartford.

#### TOWN COMMITTEES.

Tolland, Mrs. E. S. Agard, P. O. Tolland.

“ Mrs. Bradley M. Sears, “ Rockville.

---

\* Chairman.

† Secretary and Treasurer.

‡ Deceased.

Andover,	Mrs. A. H. Lyman,	P. O. Andover.
"	Mrs. Charles B. Stearns,	" "
Bolton,	Mrs. E. D. Alvord,	" Bolton.
"	Mrs. Orlando Sperry,	" "
Columbia,	Mrs. C. N. Gallup,	" Columbia.
"	Mrs. William H. Yeomans,	" "
Coventry,	Mrs. H. W. Mason,	" So. Coventry.
"	Mrs. H. R. Hoisington,	" Coventry.
Ellington,	Mrs. James M. Talcott,	" Ellington.
Hebron,	Mrs. James H. Jagger,	" Hebron.
"	Miss Anna L. Gilbert,	" Gilead.
Mansfield,	Mrs. E. G. Sumner,	" Mansf'd Cent'r.
"	Mrs. B. F. Koons,	" Mansfield.
Somers,	Mrs. C. B. Pease,	" Somers.
Stafford,	Mrs. William Smith,	" Staff'd Springs.
"	Mrs. E. C. Pinney,	" Stafford.
Union,	Mrs. E. W. Upham,	" Union.
Vernon,	Mrs. William Butler,	" Rockville.
"	Mrs. Albert Pinney,	" Vernon.
Willington,	Mrs. Reuben Edgerton,	" Willington.

## MATRON OF THE HOME.

Mrs. William T. Smith, P. O. Andover.

The Home is at Andover, about one mile from the station on the New York & New England Railroad.

It was opened November 1, 1883. The house is comfortable and has thus far been large enough to accommodate all the children sent.

The children attend the district school of the neighborhood which is hard by the Home.

The charge for each child is one dollar and fifty cents per week, exclusive of clothing and medical attendance.

The following is the record of children admitted to the Home up to April 1, 1885, numbers being substituted for the names of the children :

Number.	Age.	Date of Admission.	Nationality.	From what Town.
1, a boy,...	3 years.	.....	American.	Willington.
2, a girl,...	12 "	May.	"	Stafford.
3, a boy,...	8 "	October.	"	Vernon.
4, a boy,...	4 "	October.	"	Willington.
5, a girl,...	14 "	October 20.	French.	Stafford.
6, a boy,...	5 "	October 29.	American.	"
7, a boy,...	2 "	October 29.	"	"
8, a girl,...	6 "	November 22	"	"
9, a girl,...	4 "	November 22.	"	"
10, a boy,...	5 "	February 10.	French.	"
11, a boy,...	10 "	February 10.	"	"
12, a girl,...	11 "	February 10.	American.	"

Numbers 2, 3, and 5 have gone into homes.

# TOLLAND COUNTY TEMPORARY HOME

*in account with* BOARD OF MANAGEMENT.

## *Cr.*

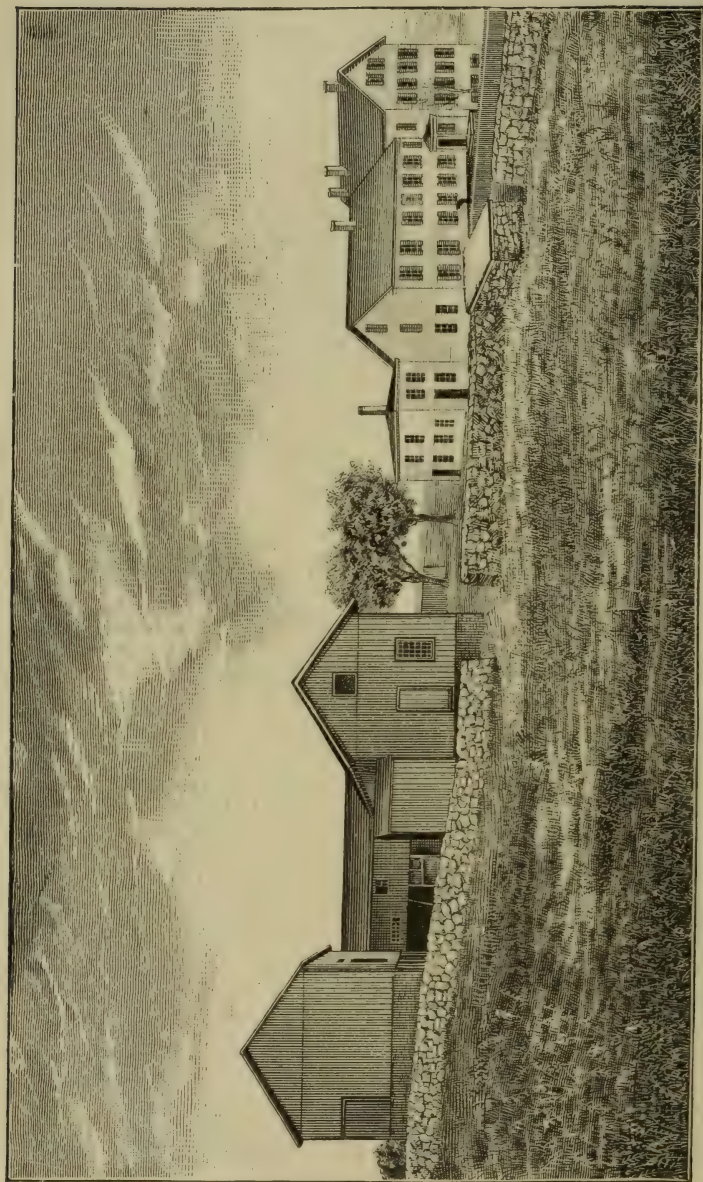
By State appropriation, . . .	\$1,000.00
By cash for board of children, . . .	150.22
By cash for use of garden, . . .	15.00
	<hr/>
	\$1,165.22

## *Dr.*

To cash for rent, . . .	\$100.00
To cash for fuel and lights, . . .	78.95
To cash for furniture, . . .	311.01
To cash for provisions, . . .	423.01
To cash for clothing, . . .	70.66
To cash for matron and help of all kinds, . . .	146.51
To cash for sundries, . . .	19.97
	<hr/>
	\$1,150.11







STORRS AGRICULTURAL SCHOOL, MANSFIELD, CONN.

# ANNUAL REPORT

OF THE

## TRUSTEES

OF THE

# STORRS AGRICULTURAL SCHOOL

AT

MANSFIELD, CONN.

1884.

---

Printed by order of the General Assembly.

---

HARTFORD, CONN.:

PRESS OF THE CASE, LOCKWOOD & BRAINARD COMPANY.

1885.

# THE STORRS AGRICULTURAL SCHOOL,

MANSFIELD, CONNECTICUT.

1884-5.

---

## TRUSTEES.

	Term Expires.
Gov. HENRY B. HARRISON, NEW HAVEN, <i>President</i> .	
F. RATCHFORD STARR, LITCHFIELD, <i>Vice-President</i> .	1886.
T. S. GOLD, WEST CORNWALL,	
<i>Secretary and Auditor.</i>	1887.
J. P. BARSTOW, NORWICH, <i>Treasurer</i> .	1887.
S. O. VINTON, EAGLEVILLE, <i>Auditor</i> .	1886.
PROF. S. W. JOHNSON, NEW HAVEN, <i>Ex officio</i> .	
J. B. OLCOTT, SOUTH MANCHESTER,	1885.
J. M. HUBBARD, MIDDLETOWN,	1885.
E. H. HYDE, STAFFORD,	

---

## OFFICERS OF THE SCHOOL.

B. F. KOONS, Ph.B., M. A., <i>Principal: Professor of Biology and Geology.</i>
JOHN H. WASHBURN, B. S., <i>Professor of Chemistry and Mathematics.</i>
L. P. CHAMBERLAIN, <i>Professor of Horticulture, Agriculture, and Farm Superintendent.</i>
MRS. L. P. CHAMBERLAIN, <i>Matron.</i>

## AN ACT

### ESTABLISHING THE STATE AGRICULTURAL SCHOOL.

GENERAL ASSEMBLY,  
JANUARY SESSION, A.D. 1881.

*Be it enacted by the Senate and House of Representatives in General Assembly convened :*

SECTION 1. The Storrs Agricultural School is hereby established for the education of boys, whose parents are citizens of this State, in such branches of scientific knowledge as shall tend to increase their proficiency in the business of agriculture.

SEC. 2. There shall be appointed by the Senate six trustees of said school, two of whom shall in the first instance hold office for two years, two for three years, and two for four years, said terms to be determined by lot, and after the first election such trustees shall be elected for three years, or to fill an unexpired term. The Connecticut Board of Agriculture shall also, annually, elect a trustee, and the director of the Connecticut Agricultural Experiment Station shall be *ex officio* one of said trustees. The governor of the State shall be *ex officio* president of said board of trustees.

SEC. 3. Said board of trustees, when elected in accordance with the provisions of the foregoing section, shall be, and hereby are, empowered to take in behalf of the State of Connecticut deeds of such lands and other property, and such money, as may be donated for the purpose of establishing and maintaining said school.

SEC. 4. To said board of trustees shall be committed the location of said school, the application of the funds for the support thereof, the appointment of managers and teachers, and the removal of the same; the power to prescribe the studies and exercises of pupils in said school, rules for its management, and the admission of pupils; and they shall annually report to the General Assembly the condition of said school.

SEC. 5. The sum of five thousand dollars is hereby appropriated annually for three years for the support of said school, provided



lands, buildings, and other property, or money, amounting in the aggregate to fifteen thousand dollars, as appraised by said trustees, shall be donated to the State for the establishment and support thereof, and the comptroller is hereby directed to draw orders on the treasurer quarterly for such a total amount upon the presentation of a certificate signed by the board of trustees, or a majority thereof, that said school has been in operation during the quarter, and a like sum expended.

# REPORT.

---

*To the General Assembly of the State of Connecticut:*

The Trustees, according to the conditions of the act establishing the Storrs Agricultural School, present the following report :

It embraces reports of the several departments of instruction, general inventory, general course of study, commencement exercises, account of library, donations, calendar, and catalogue of students.

The plea for more laboratory accommodations, and for a new barn, is fully endorsed by us. The increasing number of pupils proves the estimation in which the school is held by the citizens of the State, that they believe in its advantages, and that they demand its continued support.

## REPORT OF THE PRINCIPAL, STORRS AGRICULTURAL SCHOOL.

*To T. S. Gold, Secretary of the Board of Trustees :*

SIR: In presenting the Fourth Annual Report of the Storrs Agricultural School, we aim to give you, in as brief a manner as possible, yet consistent with clearness, a statement of the working of the school during the past year; also venture to suggest a few of our present and pressing needs. Owing to frequent calls for information concerning the school, the plan upon which it is founded, its meetings, etc., we issued the following prospectus in June last :

### PROSPECTUS.

Section 1 of the Act of the General Assembly establishing the School reads as follows: "The Storrs Agricultural School is here-

by established for the education of boys whose parents are citizens of this State, in such branches of Scientific Knowledge as shall tend to increase their proficiency in the business of agriculture "

#### LOCATION.

The school is situated in the town of Mansfield, Tolland County, one of the most healthful regions of the State, and its railroad station is Eagleville, on the New London Northern road, eight miles north of Willimantic.

#### COURSE OF STUDY.

As stated above, the object of the school is to teach practical and scientific agriculture and horticulture, yet as subservient and necessary to this purpose, various other branches of study are taught, especial prominence being given to those most necessary for the successful prosecution of agriculture.

The full course of study requires two years of three terms each, each term being twelve weeks long, or the school year aggregating thirty-six weeks. For the arrangement of the terms and vacations see the calendar at the end of the prospectus. Students receive instruction both in the class-room and upon the farm.

In the class-room they study those branches of natural science, and only those, which have a directly useful bearing upon New England farming, and the in-door work is made to harmonize with that upon the farm and in the garden. The branches pursued in general are General and Agricultural Chemistry, Natural Philosophy, Farm Mechanics, Elementary Geometry, Land Surveying, Botany, Zoölogy, which includes especially domestic animals and insects injurious to crops of the farm and garden, Geology, Human and Animal Physiology, Agriculture, Farm Accounts, Stock Breeding, Milk Production, and English; taking up first the general principles of these sciences, and afterwards their special application to practical agriculture.

On the farm they are taught the practical applications of the principles learned in the class-room to every kind of farm-work, so that each boy may become skillful in the management of a farm.

The managers of the school are glad to be able to announce to the young men of the State that they have lately secured the ser-

vices of Mr. L. P. Chamberlain as professor of agriculture, horticulture, and farm superintendent. Prof. Chamberlain was superintendent of the farm at the State Reform School during the last twenty-seven years, and all who are acquainted with the character of his work there are aware that he has kept fully up with the times, and is eminently fitted for his present position; and his success there as a practical, progressive farmer, has won for him the confidence and esteem of the agriculturists throughout this and other States.

#### FACILITIES FOR INSTRUCTION.

The school possesses a farm of 170 acres, well fitted for purposes of instruction and provided with a commodious school building, also barns and out-buildings, all of which was the gift of Mr. Augustus Storrs, and to this Mr. Charles Storrs added six thousand dollars, and this, together with the State bounty, has been expended in stocking the farm, making necessary changes, purchasing the outfit, and paying the running expenses of the school.

The school possesses apparatus sufficient to illustrate the most important facts of chemistry and physics, and the biological laboratory is supplied with compound and dissecting microscopes, both mounted and unmounted skeletons of domesticated animals, a small collection of insects injurious to farm and garden crops, and a few specimens of their destructive work. The cabinet also contains a reasonable representation of the rocks, ores, and minerals of the State. A library of over six hundred standard books of reference, scientific, agricultural, and miscellaneous, is at all times accessible to the students, and it is hoped that at no distant date either the State or friends of the School will add many more, which the greatest efficiency of the library demands.

#### REQUIREMENTS FOR ADMISSION.

According to the Act of Incorporation, the School is for "The education of boys whose parents are citizens of the State." Applicants must be at least fifteen years of age, and must furnish a certificate of good moral character from a clergyman or member of the Board of School Visitors of the town where they reside. They must be able to read and write ordinary English correctly and intelligently, and must be familiar with simple arithmetic, including common and decimal fractions, proportion and percent-



age, and have a fair knowledge of geography and American history.

No pupils will be received into the regular classes after the beginning of the school year, except those who can sustain a satisfactory examination in all the studies which have been pursued by the class they wish to join.

New classes are not formed at any other time than the beginning of the school year, which is at the opening of the fall term in September; hence those who contemplate entering the school would do well to make application, at least as early as September 15th, and present themselves for the entering examination at the proper time.

#### DEPORTMENT.

Every pupil, on becoming a member of the school, thereby pledges himself to obedience to its rules, and to a diligent performance of his duties.

Students are expected at all times to demean themselves in a quiet and gentlemanly manner. No student will be allowed to remain in the school, who, by misconduct or indolence, shows himself unworthy of its benefits.

The regulations of the school require all pupils to attend church once on the Sabbath.

#### SPECIAL STUDIES.

Young men, suitably qualified, may be received into the school after due examination, as special students, to pursue a part of the studies of the regular course, on condition that their time shall be fully and profitably occupied.

#### DIPLOMAS.

Students who have completed the full two-year course of study, and have maintained a fair standing in deportment, study, and work, will receive a diploma of graduation.

The graduating classes of 1883 and 1884 each had six members.

#### EXPENSES.

By the liberality of the Messrs. Storrs, and with the help of the State bounty, the trustees are enabled to offer first-class instruction at the low rate of \$10.00 per term, or \$25.00 per year; \$10.00 payable at the opening of the first and second terms each, and

\$5.00 at the opening of the third; arrangements are made for remitting this charge in worthy cases, making tuition free.

Good board, including washing, fuel, and lights, will be furnished at cost, which will vary with the price of provisions. At the end of each quarter the running expenses of the boarding department for the term are divided among the whole number present. During the last two years the cost of board, which also includes furnished rooms, washing, fuel, and lights, has averaged \$3.59 per week.

The text-books used in the school are bought at reduced rates and furnished to the students at cost.

Individual records of labor, other than that performed for purposes of instruction, will be kept, and reasonable compensation allowed for it.

Extra labor as far as practicable will be furnished to those who desire it towards self-support, when it can be performed without interference with regular duties.

#### HOURS OF LABOR AND STUDY.

During the fall and winter terms, when the necessities of the farm demand it, the students are required to spend three hours daily upon the farm, and six or more upon study, laboratory work, and recitations; one class going to the farm in the forenoon and the other in the afternoon. And during the spring term five hours a day are required upon the farm, and five or more in school work.

Under the direction of the farm superintendent the students do all the farm work, including care of stock, milking, and all chores.

In the general work of the school, there has been little of note to characterize one part of the year more than another. Good, honest work among the pupils has been the rule, and lack of it the exception; also as to deportment, their conduct in the main has been very exemplary. At the opening of the fall term, the number of pupils increased to such an extent, that the accommodations in the school buildings were entirely exhausted, and it became necessary to quarter three of the young men at the farm-house, and had we encouraged those who contemplated joining the school late in the fall

term, or at the opening of the winter term in January, we would have forty or more pupils present now. It seems necessary to repeat the suggestion of last year; that those who contemplate entering the school, or sending their sons here, should plan to do so at the opening of the year in September, as a new class is formed only at that time, and frequent trials of admitting pupils after the classes are well started in their work, have always proved unsuccessful. The studies here being so unlike those pursued in the ordinary schools of the State, it is not possible for a young man who has not previously studied them, to enter late, and do justice either to himself or his studies, and with our present force of teachers it is not possible to form new classes for those that come at other times than the opening of the term. Since the middle of November we were compelled to advise a half dozen or more boys not to make the trial of entering late, but rather wait till next fall and then come in regularly.

The general management and regulations of the school, and the daily programme of hours for work, study, recitation, etc., have been about the same as those given in last report. It would hardly seem necessary that I should give you a detailed account of the class-room work done in my department of school work proper, but for the information of those not familiar with the plan and extent of our work, I enter more into details. For the number of hours a week devoted to each study, I would refer you to the schedule of class-room and laboratory work upon a subsequent page. The entering class begin Human Physiology, using Huxley's Elements as a text-book, and continue the study through the year, I bringing in what collateral aids, such as dissection of animals or parts thereof, as will illustrate the subject under consideration and make it the most instructive.

*Botany* is also taken up at the same time, the class using Gray's Lessons and Manual as a text-book, and this, with lectures and botanical study outside of the book, is carried through the first two terms, and the last ten weeks of the year are then used in the study of flowers, some members of the class identifying fifty or more plants, and then during the

first term of the Senior year the "Structural Botany," part of Johnson's "How Crops Grows," is used as a text-book, and during this time considerable laboratory work is done, all of which takes the students deeper into the subjects of plant structure and growth, vitality and germination of seeds, root action, plant fertilization, production of varieties, etc.; the whole being calculated to give the students a good knowledge of the physiology of plants; and finally the last term of the Senior year is used in identifying and becoming familiar with our common trees, shrubs, sedges, grasses, etc.

As a third study with me, the class upon entering the school begin Vertebrate Zoölogy. A large part of the work in this branch is dissection of vertebrate animals, the students becoming familiar with the structure, especially of the horse and ox. For this purpose one or two old horses are used, also a calf or two, as much time as practicable being spent upon the internal structure and physiology, then afterwards the students dissect the skeletons and become reasonably familiar with the whole animal structure, especially of the feet and legs, and incidentally the diseases to which these parts are subject.

The second year the class takes up Entomology for a term, in the first place studying the general character of the various orders of insects, and then more particularly the habits and life history of those injurious to farm products, and the methods of checking their ravages. During the remainder of the year the lower sub-kingdoms of the animal kingdom receive some attention, more particularly the worms, such as the tape-worm, trichinæ, pin-worms, fluke-worms, etc., and indeed all the internal parasites of man and the domesticated animals. In all these studies of the animal kingdom we do not aim to teach veterinary science, that being a very important and distinct profession in itself, but rather to impart such knowledge as will enable the young men to use good judgment, and the "ounce of prevention" in all their care of themselves and their domestic animals.

Geology is also taken up in January of the first year, the class becoming familiar with the ordinary rocks and minerals,



the origin and composition of soils, clays, peats, and the character of geological forces in general. As opportunity offers, excursions are made with the students among the hills in the vicinity, for the purpose of geological and botanical study. During the first half of the senior year, quite an extended course of lectures is given upon the subject of Hygiene, or individual, home, and public health, special attention being given to sanitation of the home and farm, as affecting the health of man and the domesticated animals. One branch formerly taught by me, Stock Breeding, will hereafter be in other and more efficient hands, as Prof. Chamberlain will include that in his department. As to the work done in the other departments of the school and upon the farm, I refer you to the following reports.

#### REPORT OF PROF. J. H. WASHBURN.

MANSFIELD, CONN., Jan. 1, 1885.

*To the Trustees of the Storrs Agricultural School:*

GENTLEMEN: I have the honor herewith to submit the following report of the chemical, physical, and mathematical department under my instruction. The course of instruction as regards topics and the time allotted to those subjects, is essentially that embodied in my report of the previous year. The department is grateful to the trustees for supplying a long needed want (an accurate balance) by means of which the truth, practical applications, and exactness of many physical and chemical laws taught, may be illustrated. The Juniors occupy four hours per week during the first and second terms in recitations upon "Avery's Complete Chemistry." Nine hours per week during the spring term are devoted to Qualitative Analysis. During the fall term, senior year, the chemical work is continued with lectures upon Organic Chemistry, treating of the products found in the bodies of plants and animals, their practical applications in the industries and arts. The chemistry of the animal body, the changes of the food, the functions of chemical compounds found therein, supplements their physiology and anatomy of the junior year, and is designed to fit them for the appreciation of the science of cattle-feeding. Agricultural Chemistry is studied during the whole of the senior year;

the first term, Professor Johnson's "How Crops Grow," and the second and third are spent upon the same author's "How Crops Feed," together with "Cattle Feeding," as before mentioned. Lectures are given upon the composition, analysis, value, and manufacture of fertilizers, using the reports of all our Experiment Stations as our source of information. No young man leaves the institution without understanding the analysis and tables as given in these Reports.

#### LABORATORY.

No extra charge is made for instruction in the analytical laboratory. The chemicals are furnished to each student by the institution; the only charge made is for breakage. Each student on entering the laboratory takes an outfit which is deemed necessary for the term's work; this is charged to him at cost. It is taken back at the end of the term, the natural wear of the iron and wooden articles being overlooked. This breakage bill will vary from ten cents to one dollar per term, according to the care exercised by the student.

#### NATURAL PHILOSOPHY.

Philosophy or Physics is an important branch of my department. The text-book used is "Avery's Elements of Natural Philosophy," which is supplemented by lectures. Especial effort is made to present clearly the force and practical application of the few laws studied, which can only be done by experiment and problems. The young men are so deficient in the mathematics necessary to do this, that the most of the time allotted to physics during the first term is consumed in bringing them into a mathematical line of thought, and teaching the application of the formulas; thus time does not favor as extensive work in this department as would be to the greatest advantage of the students.

#### MATHEMATICS AND SURVEYING.

Four hours per week during the first term, senior year, has been devoted to recitations in Plane Geometry, for the purpose of understanding mensuration and introducing surveying. The first of the second term is employed in studying Plane Trigonometry with the use of logarithms, that they may be applied to surveying. Time and the policy of the institution encourages only the study of the most practical rules which relate to the science of measuring land.

Gillespie's "Land Surveying" is our text-book, the last of the winter term, and during the first part of the spring term, as soon as weather permits in the spring, we go to field-work. The first exercise in the field is chain surveying and calculating areas by diagonals. A good deal of time is spent upon this, as the chain or tape is the simplest and most accessible instrument for the farmer. Every member of the last class became familiar with the use of the instrument, assisted on a survey of the whole farm, and each one independently surveyed a large field, drew a plot of it, like wise of the farm. Some work will be done in leveling, and calculating the mass of earth to be removed for ditches, embankments, and the costs thereof. In every case I must speak in the highest terms of that resolute, industrious spirit manifested by each member of the last class, and which has so signalized the present class in all their preparatory work. A good degree of proficiency is already insured from each member.

#### ENGLISH.

English Grammar to the Juniors and Rhetoric to the Seniors has been taught about one hour a week. Essays are required once in two weeks from the Seniors during the last two terms of their course. These are upon subjects treated in the course of study. It is considered to be a good method of securing accuracy of thought, at the same time familiarizing the student with expressing his ideas in writing. Great credit is due these young men for the emulation and earnestness displayed by both classes: and the good work this school is doing speaks loudly for itself in their advancement, which is a powerful argument to those watching their progress. I have had quite a number of visits to my recitations and exercises from the friends of the institution, both resident and those from away. The trustees are especially welcome to our class exercises. These visits we are very grateful for, because they stimulate both students and those conducting the exercises.

I am very respectfully your obedient servant,

JOHN H. WASHBURN.

#### REPORT OF PROF. L. P. CHAMBERLAIN.

*To the Trustees of the Storrs Agricultural School:*

GENTLEMEN—In presenting this report, it shall be my purpose to give you, as clearly as I can, and as concisely, those facts and

figures which will show how our labor has been expended, and what the results have been. In all our work it has been our aim to leave each field better than we found it. This has in some instances been done partly at the expense of the crop grown during the present season, in the confidence that future gains would fully compensate for present loss. Especially is this true of our oat and potatoe crops, the planting of which was considerably delayed in order that the plats might be cleaned of boulders, which seriously obstructed their cultivation. These fields are now in grass, and no obstacle will hinder the mower from doing its work rapidly and perfectly. Our aim has been, at all times, to do everything thoroughly. Our means of fertilization have been so limited that only a small area has been cultivated, though we are now able to plan more liberally for the future, and hope to produce a full supply of all such crops as are needed for the family and for the farm stock.

The farm is well adapted to the growth of most of the crops common to Connecticut. It has a great diversity of soil, ranging from the light, dry, sandy formation, to the heavy, moist, clayey loam, both of which extremes are found upon its highest points. It has also a large tract of purely vegetable deposit, which is capable of drainage and cultivation. The capacity of such a farm can hardly be made a matter of calculation, and for the purposes of the school can hardly be excelled. True, its development has hardly begun, but just as truly those who have had its immediate supervision have wrought against great hindrances, but have done much to smooth the way to ultimate success. I fully believe in the wisdom of the State in locating its Agricultural School where just such conditions as these might surround, at first, for if these cannot be modified and overcome, then success in New England agriculture has become a thing of the past.

#### LABOR.

The labor upon the farm has been performed by the students to a great extent, during those periods when they have been in the school. This however does not include the summer months, which are the busiest of the year, when haying, harvesting, and all the operations of the farm and the garden demand the most constant and laborious attention. Besides, during the intermission, much instruction of the most practical importance, relating to methods of culture, and general care of the farm and the garden, might



be given more profitably than in the class-room. This, with our present limited means of employing other labor, must always remain a serious hindrance to an extensive cultivation of hoed crops, and must determine to a considerable degree the general policy of the farm.

It gives me pleasure to speak of the general cheerfulness and faithfulness of the students while they are employed upon the farm. And as they are accustomed to similar labor at home, in a great majority of cases, I find them usually quite efficient and often skillful. All kinds of farm labor are assigned to them, and all are done well. I have also found in Mr. Goddard a kind, efficient, and in every way helpful co-worker, and desire to express to you my appreciation of his kindness and cordiality from the day of my coming to the school. During the fall term most of the labor has been employed upon permanent improvements. The ordinary work of the farm has hardly been more than incidental, as a force varying from six in the forenoon to twenty or more in the afternoon has been constantly employed. During the season, about twelve acres have been cleared of boulders, and these have either been laid into walls, or hauled where they can be used for this purpose in the future. A small amount of stone under-drain has also been laid largely by the students. This is the beginning of a system of drainage which is greatly needed, to be completed as rapidly as possible, under your direction.

#### DAIRY.

Our dairy comprises only seven cows, but most of these are superior animals, and have supplied both the school and the farmhouse with milk and butter during the year, with the exception of a short time in the beginning of the year. To offset this deficiency, however, later in the season an equal amount was sold. The butter is made by the boys under the direction of Mrs. Goddard, and is uniformly of an excellent quality. A Mosely Creamer has been used, and has given good satisfaction. 1,405½ pounds of butter have been made, and 3,660 quarts of new milk, and 5,971 quarts of skim-milk have been furnished for the use of the family. Six calves have also been fed upon the skim-milk, and a considerable quantity has been given to the swine. This branch of our farming can be greatly extended, and will receive the utmost care which it is possible to give to it. Some attention has been given

to breeding choice animals both for the pail, and the yoke, and our dairy will soon receive some accessions from this source. Our stock embraces Devons, Jerseys, and Durhams, and their comparative merits are being tested side by side.

#### THE GARDEN.

A full supply of vegetables common to the kitchen garden were cultivated, together with a small amount of roots for the farm animals. For the amount and varieties of these I would refer you to the annexed tables. It would seem that, for the present, at least, the demands of the family and the farm-stock should be the limit of the cultivation of these products, as no near market offers sufficient inducement for their production.

#### SMALL FRUITS.

This department has not received the attention which it deserves. No other, if we reckon profit and pleasure the two essentials of success, is more important. Beyond a few inferior strawberry plants, and a small number of raspberries, nothing had been done to furnish these most delicious fruits, for the home table. Through the liberality of the Messrs. Hale Bros., and Mr. P. M. Augur, we were able to set about one half acre of strawberries (3,000), raspberries (600), currants (100), grapes (15), and blackberries (100), and a fair start was made in the direction of a full supply. Owing to the extreme drouth, and the vicious grub, these did not all live, but enough are now looking well to give us a fair supply of fruit, and furnish plants for another attempt at success. Mr. J. A. Lewis of Willimantic, also donated a generous supply of rhubarb plants, which, though not a small fruit, precedes these, and will be very useful to us.

#### ORCHARDING.

This consists largely of old, scattering apple-trees, which show signs of having been grafted from time to time, but with quite indifferent success. Their fruit is generally of a poor quality, and hardly pays for the annoyance they cause while cultivating about them. So far as they are sufficiently vigorous to warrant the outlay, we propose to graft them the coming spring and remove all others. A few exceptional trees yield choice fruit of both the early and late sorts. In addition to these, two acres were devoted to

apples in the spring of 1882. This was carefully cultivated and fertilized last spring, and a fine growth has resulted.

Recently the rocks have all been made ready for removal in the spring, and a slight dressing of muriate of Potash will be supplied each tree, and the entire lot will be re-seeded for grass. There is also a peach orchard containing about forty vigorous and thrifty trees, which promised well for a full crop the coming season, but an examination shows that every fruit-bud was destroyed by the extreme cold of December 19th and 20th. These were highly fertilized with bone last spring, and have shown no symptoms of disease. A half dozen of Meech's prolific quince, set last spring, and all in a thrifty condition, with about the same number of pear-trees, completes the list of our fruit-bearing trees. More pear, quince, and cherry-trees would be a valuable addition to our supply of useful and profitable fruit trees.

#### FARM BUILDINGS.

These are inadequate to meet the future demands of the farm. The entire storage room was fully occupied during the present season, and, with a more favorable summer, we should have had to resort to the wasteful method of storing some portion of our fodder in the open air. The inconvenience of these structures is so familiar to you that I need not urge them as additional reasons for calling your attention to their condition. If we succeed in our plans, for even the coming year, we shall need additional storage room, and trust that for the sake of our domesticated animals, if not for our own comfort, suitable buildings may be erected. In closing this report, allow me to thank you for your generous approval of our work during the past few months, and for your frequent words of encouragement.

L. P. CHAMBERLAIN, *Farm Supt.*

#### INVENTORY.

The general inventory at this date shows:

Appraisal of farm and buildings, 1881,	.	.	\$15,000.00
Improvements, 1881 and 1882,	.	.	1,500.00
“ 1883,	.	.	2,500.00
“ 1884,	.	.	1,500.00

Live stock: one yoke oxen, seven cows, one pair one-year-old steers, one pair twin steer calves, one Durham heifer, two years old, four heifer calves, one pair farm horses, one single horse, three breeding hogs, one pair Berkshire pigs, five store pigs, one fat hog, sixty Plymouth Rock fowls, . . .	\$1,470.00
Farm implements, . . . . .	1,086.00
Dairy implements, . . . . .	81.80
Joiners' tools, . . . . .	24.85
Office furniture, . . . . .	37.60
Library, . . . . .	646.38
Physical and Chemical apparatus and chemicals, . . . . .	730.82
Biological laboratory, . . . . .	327.44
Household furniture, . . . . .	2,080.27
Dining-room and kitchen furniture, . . . . .	361.46
Laundry, . . . . .	44.49
	<hr/>
	\$27,391.11
Farm and garden products on hand Dec. 31st, . . . . .	\$600.00
Wood, coal, and groceries, . . . . .	180.00
	<hr/>
	\$780.00

## FARM AND GARDEN PRODUCTS, 1884.

16 tons of English hay, . . . . .	\$256.00
4 tons of Stock hay, . . . . .	48.00
3 tons of Hungarian hay, . . . . .	45.00
3½ tons of rowen hay, . . . . .	56.00
5 tons of swamp hay, . . . . .	50.00
3 tons of corn fodder, . . . . .	36.00
2 tons of rye straw, . . . . .	24.00
3 tons of oat straw, . . . . .	36.00
2 tons of bedding, . . . . .	15.00
1 ton of mangolds, . . . . .	15.00
½ ton of pumpkins, . . . . .	2.50
145 bushels of potatoes, . . . . .	87.00
5 bushels onions, . . . . .	3.75
52 bushels carrots, . . . . .	20.80
25 bushels beets, . . . . .	6.25
10 bushels table beets, . . . . .	5.00
50 bushels turnips, . . . . .	12.50



10	bushels green corn,	.	.	.	\$7.50
30	bushels sweet corn for seed,	.	.	.	30.00
152	bushels ears of field corn,	.	.	.	60.00
123	bushels oats,	.	.	.	49.20
50	bushels rye,	.	.	.	37.50
200	cabbages,	.	.	.	8.00
300	heads of lettuce,	.	.	.	6.00
120	quarts of strawberries,	.	.	.	12.00
50	quarts of raspberries,	.	.	.	5.00
48	quarts of currants,	.	.	.	3.84
150	pounds of grapes,	.	.	.	7.50
500	heads of celery,	.	.	.	15.00
10	bushels of tomatoes,	.	.	.	5.00
5	bushels green beans,	.	.	.	5.00
2	bushels dry beans,	.	.	.	4.00
3	bushels pears,	.	.	.	3.00
30	bushels of apples,	.	.	.	30.00
	cucumbers and melons,	.	.	.	5.00
18,181	quarts of milk, 3c.,	.	.	.	545.43
15	pigs,	.	.	.	66.00
6	calves,	.	.	.	100.00
1,451	pounds of pork,	.	.	.	104.66
	poultry,	.	.	.	17.26
	eggs,	.	.	.	44.56
					<u>\$1,890.25</u>

The following schedule indicates the amount of time given to lectures, recitations, and laboratory work in each study during the year:

### WINTER TERM, 1884.

#### SENIOR CLASS.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
Zoölogy,.....	2-3	.....	2-3	.....	.....
Stock Breeding,.....	.....	2-3	.....	2-3	.....
English,.....	3-4	.....	.....	.....	.....
How Crops Feed,.....	.....	3-4	3-4	.....	.....
Surveying,.....	4-5	4-5	4-5	4-5	1-2
Hygiene,.....	.....	.....	.....	.....	2-3

## JUNIOR CLASS.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
Geology, .....	9-10	9-10	.....	.....	.....
Botany, .....	10-11	.....	9-10	.....	.....
Physiology, .....	.....	.....	.....	9-10	8-9
Zoölogy, .....	.....	.....	.....	.....	9-10
Chemistry, .....	.....	10-11	10-11	10-11	10-11
Physics, .....	11-12	11-12	11-12	11-12	11-12

## SPRING TERM, 1884.

## SENIOR CLASS.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
Zoölogy, .....	2-3	.....	.....	.....	.....
Botany, .....	.....	2-3	.....	.....	.....
Science of Government, .....	.....	.....	2-3	.....	3-4
Rhetoric, .....	3-4	.....	.....	.....	.....
Cattle Feeding, .....	4-5	3-4	3-4	.....	.....
Fertilizers, .....	.....	.....	.....	3-4	.....
Surveying, .....	.....	4-5	4-5	4-5	1-2
Science of Wealth, .....	.....	.....	.....	.....	2-3

## JUNIOR CLASS.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
Physiology, .....	9-10	.....	.....	.....	.....
Zoölogy, .....	10-11	9-10	.....	.....	.....
Geology, .....	.....	.....	9-10	9-10	.....
Botany, .....	.....	.....	.....	.....	9-10
English, .....	.....	10-11	.....	.....	.....
Chemistry (Laboratory), .....	11-12	11-12	10-12	.....	.....
Physics, .....	.....	.....	.....	10-11	10-11
Chemistry (Lectures), .....	.....	.....	.....	11-12	.....
“ (Lessons in text-book), .....	.....	.....	.....	.....	11-12

## FALL TERM, 1884.

## SENIOR CLASS.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
Botany,.....	2-3	2-3			
Entomology,.....			2-3½	2-3½	2-3
Organic Chemistry,.....	3-4	3-4	3½-4		
Agricultural Chemistry,...	4-5	4-5			
Geom. and Trig. (prepara-			4-5	3½-5	
tory to surveying),.....					
English,.....					1-2

## JUNIOR CLASS.

	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.
Zoölogy,.....	9-10	9-10			
Physiology,.....	10-11		9-10	9-10	
Botany,.....			10-11		9-10
Physics,.....	11-12	10-11		10-11	
Chemistry,.....		11-12	11-12	11-12	10-11
English,.....					11-12

## COMMENCEMENT EXERCISES.

The exercises of the second class to graduate from the school, were held on June 19th, in an oak grove near the school, upon Mr. Storrs's land. The following is the programme presented at that time:

## EXERCISES OF GRADUATING CLASS.

JERRY L. FENN, . . . . . Plymouth

The Laws of Dew, Frost, and Storms.

ANDREW HYDE, . . . . . So. Glastonbury

The Feet of the Horse and Ox, and their Diseases.

MUSIC BY SCHOOL GLEE CLUB.

FRED. C. LEAVENS, . . . . . Wauregan

Irrigation and Drainage.

SAMUEL Q. PORTER, JR., . . . . . Unionville

Conditions of Health in Our Homes.

## MUSIC BY ORCHESTRA.

FRANK S. HUBBARD, . . . . . Glastonbury  
Insects Injurious to the Apple.

CLIFFORD S. BARNES, . . . . . Collinsville  
The Physiology and Chemistry of Cattle Feeding.

## MUSIC BY SCHOOL GLEE CLUB.

ADDRESS BY REV. HENRY WARD BEECHER.

## MUSIC BY ORCHESTRA.

ADDRESS BY HIS EXCELLENCY, GOV. THOS. M. WALLER.

## MUSIC BY ORCHESTRA.

## CONFERRING OF DIPLOMAS.

## THE LIBRARY.

During the year the library has received a large accession of books, over 400 volumes, from various sources. Among the additions are a full set of Encyclopædia Britannica (twenty-two volumes), also Johnson's Encyclopædia (four volumes), both from the late Mr. Charles Storrs, who also gave \$200 in money to purchase such books as our wants demand. Only a little over one-fourth of this has yet been expended.

A large number of persons have shown their interest and confidence in the school by presenting needed articles, which were very opportune. I would take this opportunity of expressing our thanks to the many friends who have thus kindly remembered us.

## DONATIONS TO THE SCHOOL.

A generous gift of pictures and portraits from the late Mr. Charles Storrs was gratefully received, and they add much to the furnishing of the walls of our rooms, and are instant reminders of his many kind remembrances of the School. Also from the same, \$100, to pay the exchange for a better driving horse and a United States Flag 8×15 feet; one New York seed drill, from Higganum Manufacturing Company; one plow, No 3, Columbia Plow Works from Copake Iron Works, N. Y.; five straight thrust hoes, ten angular thrust hoes, five bayonet hoes, one mullein hoe, from William J. Wood, President of the Collins Company; one set of caponizing tools from J. C. Sternberg, Hartford, Conn. Some rhubarb roots from Ex-Governor Hyde; one-half dozen quince trees, one dozen peach trees, two flowering shrubs, one dozen



grapes, and twenty scions, all from Mr. P. M. Augur, Middlefield, Conn. Fifty rhubarb plants and seventy-five scions, from Mr. J. A. Lewis, Willimantic, Conn. Two thousand one hundred and fifty strawberry plants (seven varieties), two hundred Cuthbert raspberry, one hundred cherry currants, fifty blackberry (Early Harvest), from Hale Brothers, South Glastonbury, Conn. One ton Coe's phosphate, from Mr. E. Frank Coe of New York. Receipted bill for \$53.60 advertising in the *New England Homestead*, from the editor of the *Homestead*. Also, advertisement for three months in the *Connecticut Farmer*, by the editor. One low, single-horse cart and harness, from a friend. One pair thoroughbred Berkshire pigs, from Mr. H. Sedgwick, Cornwall, Conn.

The following list of papers, contributed by the publishers, for the boys' reading room: *The Connecticut Courant*, *The Connecticut Farmer*, *Willimantic Journal*, *Willimantic Chronicle*, *American Agriculturist*, *The Rural New Yorker*, *The Cultivator and Country Gentleman*, *Farmer's Advocate*, *New England Farmer*, *Coöperative Poultry Post*, *The Religious Herald*, *Massachusetts Ploughman*, *Illustrated Christian Weekly*, (by Miss Helen Townsend of Newport, R. I.)

Last winter a course of lectures was arranged for the benefit of the school. The lectures were gratuitous, and free to the citizens. The plan was so successful that arrangements are made for the continuance of the course this winter, and we take this opportunity to acknowledge our obligations to those who have so freely served us.

#### THE HEALTH OF THE SCHOOL

has been well-nigh perfect, doubtless owing to the purity, both physically and morally, of the atmosphere of this region; a very strong argument in favor of the present location.

The board, since the school was organized, has averaged \$3.52 per week; and for the last term of this year, \$3.45. This includes all expenses pertaining to that department, including washing, fuel, furnished rooms, etc.

Parties so often inquire what part of the State have been represented in the school, that I have prepared the following list, showing how each county has been represented:

Fairfield County,	2	Middlesex County,	5
Litchfield County,	7	New London County,	8
Hartford County,	19	Windham County,	5
New Haven County,	2	Tolland County,	7

Also the question is often asked, "What becomes of the students after they have graduated from the school?" In September I looked up the different members of the two classes, those who graduated last year, and the class of this, and eleven of the twelve were working upon the farm.

The question evidently presents itself at this time: "Shall we limit our numbers to the present capacity of our buildings, or shall we make provision for all that may come?" Already a large number have applied for admission next fall, and a great many boys through the State are planning for a course of study here at no distant date. "Shall a large part of these boys be disappointed because, from lack of room, we cannot admit them; or, will the State provide ample accommodations, such as are commensurate with its dignity?" These questions lie in the very near future, for the Trustees to meet.

In the present chemical laboratory there are only places for sixteen students, and our incoming class this fall contained twenty-five. We are compelled to make temporary, and, from necessity, poorly adapted arrangements in another room and upon a different floor of the building for a part of the class, yet all who know anything about the nature of the work, and needs of a chemical laboratory and its purposes, will at once see that this will come far short of the best results to the students, especially when there is but one instructor to take charge of the whole class.

During the past year Prof. Washburn had his brother with him till June, and during the fall a number of applications were made for admission from other States, one Japanese; but all we could do was to inform them that no provisions are made for students from out of the State.

Very respectfully,

B. F. KOONS, *Principal.*

STORRS AGRICULTURAL SCHOOL,

MANSFIELD, CONN., Dec. 31, 1884.

## CATALOGUE OF STUDENTS FOR THE YEAR 1884.

## CLASS OF 1884.

John L. Andrew,	Mansfield, Tolland Co.,	Conn.
Clifford S. Barnes,	Collinsville, Hartford Co.,	"
Jerry L. Fenn,	Plymouth, Litchfield Co.,	"
Frank S. Hubbard,	Glastonbury, Hartford Co.,	"
Andrew Hyde,	South Glastonbury, Hartford Co.,	"
Fred. C. Leavens,	Wauregan, Windham Co.,	"
Samuel Q. Porter, Jr.,	Unionville, Hartford Co.,	"

## CLASS OF 1885.

Robert A. Ayer,	Saybrook, Middlesex Co.,	Conn.
Horace S. Eaton,	Chaplin, Windham Co.,	"
Willis J. Fenn,	Plymouth, Litchfield Co.,	"
Archer C. Ford,	Romford, Litchfield Co.,	"
Frank E. Fenner,	Gurleyville, Tolland Co.,	"
Edward W. Lowrey,	Southington, Hartford Co.,	"
Royal E. Meyers,	Litchfield, Litchfield Co.,	"
Herbert D. Robinson,	Chesterfield, New London Co.,	"
Isaac B. Wakeman,	Saugatuck, Fairfield Co.,	"

## CLASS OF 1886.

Elijah S. Abel,	Bozrahville, New London Co.,	Conn.
John H. Atkins,	Middletown, Middlesex Co.,	"
Eugene A. Bailey,	Middlefield, Middlesex Co.,	"
James E. Birge,	Torrington, Litchfield Co.,	"
Edgar S. Blair,	East Windsor Hill, Hartford Co.,	"
Will. L. Chamberlain,	Mansfield, Tolland Co.,	"
Fred. S. Coe,	Middlefield, Middlesex Co.,	"
Wm. H. Doyle,	Meriden, New Haven Co.,	"
Fred. A. Gallup,	Norwich, New London Co.,	"
Walter H. Garrigues,	Wolcott, New Haven Co.,	"
John H. Gardiner, Jr.,	Taftville, New London Co.,	"

Selden W. Hayes,	Granby, Hartford Co.,	Conn.
Bruce Hough,	Wheatogue, Hartford Co.,	"
Francis H. Huntington,	Norwich, New London Co.,	"
Henry R. Hayden, Jr.,	East Hartford, Hartford Co.,	"
James Hyde,	Gildersleeve, Middlesex Co.,	"
Edgar J. Leavenworth,	Redding Center, Fairfield Co.,	"
Cornelius Lucey,	Hartford, Hartford Co.,	"
John H. Merrill,	Niantic, New London Co.,	"
John B. Perry,	Clark's Falls, New London Co.,	"
Arthur L. Reed,	Rockville, Tolland Co.,	"
Fred. A. Robinson,	Glastonbury, Hartford Co.,	"
Ira B. Smith,	Hartford, Hartford Co.,	"
Eckley R. Storrs,	Spring Hill, Tolland Co.,	"
Albert E. Sumner,	Eastford, Windham Co.,	"
Frank L. Whiting,	Torrington, Litchfield Co.,	"

Present number of students, 33.

## CALENDAR.

Winter Term begins	- - -	January 5, 1885.
Spring Examinations,	- - -	March 25-27, 1885.
Winter Term ends	- - -	March 27, 1885.
Spring Term begins	- - -	April 6, 1885.
Annual Examinations,	- - -	June 12-18, 1885.
Commencement Exercises,	- - -	June 19, 1885.
Fall Term begins	- - -	September 23, 1885.
Christmas Examinations,	- - -	December 16-22, 1885.
Fall Term ends	- - -	December 22, 1885.
Winter Term begins	- - -	January 5, 1886.

Address all communications to

STORRS AGRICULTURAL SCHOOL,

MANSFIELD, CONN.



# TREASURER'S REPORT.

J. P. BARSTOW, *Treasurer,*

*In account with* STORRS AGRICULTURAL SCHOOL.

1884.	DR.	
Jan. 1.	Balance brought forward from 1883,	\$830.69
	Interest,	14.00
	Cash of Comptroller,	5,000.00
	“ board and tuition,	187.99
	“ board and tuition per Prof. Koons,	1,062.95
	“ ox and cow sold,	140.00
	“ butter sold,	26.80
		<u>\$7,262.43</u>
	CR.	
	By paid salaries,	\$1,805.55
	“ provisions, kitchen help, and fuel,	2,165.25
	“ improvements on farm and buildings,	432.88
	“ seeds, fertilizers, feed for stock, farm labor,	812.95
	“ furniture, laboratory instruments, and tools,	494.68
	“ school and laboratory supplies,	414.87
	“ stock for farm,	575.50
	“ sundries,	521.98
	By balance on hand,	38.77
		<u>\$7,262.43</u>
	Amount of bills not paid,	\$1,150.28
	Less cash on hand,	38.77
		<u>\$1,111.51</u>

HARTFORD, CONN., Jan. 1, 1885.

The undersigned Auditors of Public Accounts certify that we have examined the accounts of the Treasurer of the Storrs Agricultural School, together with the vouchers therefor, and find the same correct, for the year ending Dec. 31, 1884, showing a balance on hand of thirty eight and  $\frac{77}{100}$  dollars.

THOMAS I. RAYMOND, } *Auditors of*  
WILLIAM H. LAW, } *Public Accounts.*

We have examined the accounts of the Treasurer, and find them correct.

T. S. GOLD, } *Auditors.*  
S. O. VINTON, }





(MAIN HOSPITAL.)  
CONNECTICUT HOSPITAL FOR INSANE.  
AT MIDDLETOWN.

J. H. B. 1851

SOUTH HOSPITAL.

The Quabuck Pond, Springfield, Mass.







# NINETEENTH REPORT

OF THE

## BOARD OF TRUSTEES

OF THE

### Connecticut Hospital for the Insane,

FOR THE

### STATE OF CONNECTICUT,

WITH

### Superintendent's . and . Treasurer's . Reports;

Presented to the General Assembly at its Session in January, 1885.

---

By Order of the General Assembly.

---

MIDDLETOWN, CONN. :  
PELTON & KING, PRINTERS AND BOOKBINDERS,  
1885.

# OFFICERS OF THE HOSPITAL.

## BOARD OF TRUSTEES.

THOMAS M. WALLER,	-	-	-	-	-	NEW LONDON.
H. SIDNEY HAYDEN,	-	-	-	-	-	WINDSOR.
LUCIUS S. FULLER,	-	-	-	-	-	TOLLAND.
SAMUEL G. WILLARD,	-	-	-	-	-	COLCHESTER.
CLARK E. BARROWS,	-	-	-	-	-	EASTFORD.
HENRY B. HARRISON,	-	-	-	-	-	NEW HAVEN.
HENRY WOODWARD,	-	-	-	-	-	MIDDLETOWN.
ROBBINS BATTELL,	-	-	-	-	-	NORFOLK.
H. P. GEIB, M. D.,	-	-	-	-	-	STAMFORD.
BENJAMIN DOUGLAS,	-	-	-	-	-	MIDDLETOWN.
JOSEPH W. ALSOP, M. D.,	-	-	-	-	-	MIDDLETOWN.
ELISHA B. NYE, M. D.,	-	-	-	-	-	MIDDLETOWN.
M. B. COPELAND,	-	-	-	-	-	<i>Treasurer.</i>

## RESIDENT OFFICERS.

ABRAM MARVIN SHEW, M. D.,	<i>Superintendent and Physician.</i>
JAMES OLMSTEAD, M. D.,	<i>First Assistant Physician.</i>
WILLIAM E. FISHER, M. D.,	<i>Second Assistant Physician.</i>
CHAS. E. STANLEY, M. D.,	<i>Third Assistant Physician.</i>
JAMES M. KENISTON, M. D.,	<i>Asst. Physician at South Hospital.</i>
HENRY S. NOBLE, M. D.,	<i>Asst. Physician at New South Hospital.</i>
J. W. THAYER,	<i>Clerk.</i>
P. M. SANDERSON,	<i>Farmer.</i>
MRS. MARGARET DUTTON,	<i>Matron.</i>
MRS. A. L. WILLIAMS,	<i>Housekeeper, Main Hospital.</i>
MRS. ELLA WAITE,	<i>Housekeeper at South Hospital.</i>
BENJAMIN F. GOULD,	<i>Supervisor.</i>

All communications relative to the admission, etc., of Patients should be addressed to the Superintendent. Blanks will be furnished on application.

# Trustees' Report.

---

To the Honorable the General Assembly  
of the State of Connecticut :

The Trustees of the Connecticut Hospital for the Insane are permitted herewith to make their Nineteenth Annual Report.

The Hospital has been favored in the good providence of the heavenly Father, with another year of quietness, harmony and prosperity, in the humane work, for which it was founded. Generally the health of the patients has been good. They have escaped contagious diseases.

The excellent order, thorough system and surprising neatness maintained in the buildings, and around them, attract the attention of visitors from this and other States.

In the Summer and Autumn the abundance and variety of flowers in beds tastefully arranged on the broad lawn, are an unfailing source of pleasure.

The aim of the Hospital is to receive so far as possible every citizen of Connecticut, whose mental condition renders necessary its protection and care, that restoration to health and sound mind may be speedy and complete ; or if that may not be, to give the patient the benefit of the most careful attendance under the direction of the highest medical skill.

Those who administer the affairs of the institution have no motive to receive or detain any person, who is not a proper subject of sanitary treatment. The number usually waiting to be received is a strong reason for discharging any patient, so soon as his own good and the safety of others will permit.



Many are allowed to go before they are fully restored, because a marked improvement is apparent, and it is probable they can be properly cared for by friends.

In order to make immediate room for an acute case of recent occurrence, it has repeatedly been necessary to return to the almshouse a person who has not recovered, but who may without injury be away from the Hospital for a limited time. Such a case is frequently only the less of two evils, because the patient sent to the poor house is liable to suffer for lack of care, and the family to which he goes to be troubled by his presence.

The number of persons in need of the aid of the Hospital is year by year increasing. It has been greater in the past year than ever before.

The whole number under its care during the year was 1,103.

The number remaining on the 30th of November was 923.

The addition to the north wing, built especially for noisy patients, was completed in the Spring. It has twenty-four beds, and is abundantly supplied with light and air. The carpenters, masons and other builders, did their work well. The removal of the very noisy patients for a longer or shorter period to this ward, is a sensible and grateful relief to the patients and attendants in the wards from which these are taken. This is one of the incidental advantages of a large Hospital with many wards, which admits of a completeness of classification, impossible in a small institution.

Attention is invited to the report of the Superintendent in regard to this and other measures adopted to make room for more patients.

The continual increase of insane persons in this State renders larger accommodations a necessity. The General Assembly, in recognition of this necessity appropriated, for additional buildings, seventy-five thousand dollars. The appropriation was committed to the Trustees, as all others for the Hospital have been, with a single exception.

They chose five of their number, a building committee, whose experience in hospital erection and business affairs generally, especially fitted them for this undertaking.

With some difficulty, but favored by the low price of material and of labor, they made contracts to erect a centre building and one wing, and furnish them, without exceeding the appropriation. At much personal sacrifice, the committee have freely given their time and service to secure for the State the best buildings possible in the circumstances.

The contractors have been faithful to their engagements. The season has been remarkably favorable, and the progress of the work very satisfactory.

The accompanying reports will state more particularly what has been done in building and repairs, also to cultivate and improve the farm. The larger liberty allowed the patients, and the benefits many derive from it is cheering evidence of the progress that has been made in wise and humane care for the insane.

The occasional escape of a patient from the grounds, so far from reflecting on the officers or attendants, may be regarded as an evidence that the patients are allowed the utmost freedom consistent with their mental condition, and that the Superintendent regards it less an evil, than that out of so many hundreds one should occasionally steal away, than that all should be constantly shut up. Of the few who escape, some return before bed-time, others are usually brought back before many days. An additional appropriation to complete the buildings now in process of erection after the original plan, so that they can receive male patients, is respectfully recommended. An early appropriation will be for the advantage of the State in various ways.

The death of Mr. Richard S. Fellows, the Trustee from New Haven, on the 10th of March last, deprived the Hospital of one of its truest, wisest and most efficient friends. His interest in the enterprise led to his appointment as Trustee, when the charter was given, June, 1866.

He gave cheerfully time, money and unusual business sagacity to help the institution. His pen and his voice were ever at its service. His last day's work was to meet the Committee of the Legislature on Humane Institutions, accompany them through the buildings and about the grounds, and with impressive earnestness and eloquence

set forth the distressing need of new buildings to aid those suffering from mental disease, for whom there was no room in the Hospital.

The shadow of death, though unnoticed, was even then upon him. In a day or two he was prostrated by paralysis, and passed away two or three weeks later.

The Honorable Henry B. Harrison, the Speaker of the House, consented to accept the office, and was elected Trustee by the Senate.

The terms of the Trustees from Hartford and Tolland Counties expire this year.

It is respectfully recommended that they be reappointed.

All of which is respectfully submitted.

THOMAS M. WALLER,  
H. SIDNEY HAYDEN,  
LUCIUS S. FULLER,  
SAMUEL G. WILLARD,  
CLARK E. BARROWS,  
HENRY B. HARRISON,  
HENRY WOODWARD,  
ROBBINS BATTELL,  
H. P. GEIB, M. D.,  
BENJAMIN DOUGLAS,  
JOSEPH W. ALSOP, M. D.,  
ELISHA B. NYE, M. D.

MIDDLETOWN, November 30th, 1884:

## Superintendent's Report.

---

To the Board of Trustees of the

Connecticut Hospital for the Insane:

GENTLEMEN—The following Report of this Institution for the fiscal year ending November 30th, 1884, together with the usual statistical Tables are respectfully submitted.

There were in the Hospital at the commencement of the year 860 patients, 392 men and 468 women. This number represents so many persons. In our tables no person appears more than once in any year. If discharged and re-admitted within the year, he resumes his former case number. During the year 243 have been admitted, 121 men and 122 women; making the whole number under treatment 1,103. The number of patients discharged was 125, of whom 66 were men and 59 were women. There were 55 deaths, 34 men and 21 women. The average number of patients resident during the year was 883.22, of whom 402.58 were men and 480.64 were women.

You observe that the year closed with 63 more patients than at its commencement, and that the daily average exceeded by 29.17 that of the previous year. The highest number in the house at any time was 923, and the lowest 850. When it is remembered that the normal capacity of the Hospital is only 800 beds, it will be seen that throughout the year our accommodation has been overtaxed, and the house at all times dangerously crowded. As far as possible, all have been received who were likely to suffer for want of proper treatment; but, as in former years, many applications, numbering in all about one hundred, had to be refused, or at best, delayed for weeks, until vacancies were made by death or removals. I trust this will be the last time I shall have to report that, owing to want of room, cases have been compelled to seek relief out of the State. The progress made towards



the completion of the new South Hospital leads me to hope that before May, 1885, we shall be prepared to admit all female applicants as they arise.

#### ADMISSIONS.

Of the total number admitted, 156 were first admissions; that is persons who were, for the first time, sent to any hospital for treatment: 67 were second; 12 were third; 2 were fourth; 3 were fifth; and one each were sixth, seventh and eighth.

The large percentage of re-admissions is explained by the fact that selectmen have frequently removed chronic cases to make room for violent cases; but sooner or later, in a majority of instances, the former are brought back to the Hospital.

It affords me pleasure to say that 30 of these re-admissions had been away from the Hospital able to follow their usual avocations for periods varying from one to eight years.

The character of the admissions as regards probability of recovery was, as usual, unfavorable, owing to the duration of the disease. Of the 243 patients admitted, only 94 had been insane less than one year; 34 from one to two years; 47 from two to five years; 47 from five to thirty years; 6 over thirty years; one was not insane; and of 14 nothing could be learned respecting their previous histories. As the prospect of recovery diminishes rapidly after the first six months, and becomes an infinitesimal quantity after the expiration of one year, it is only fair to expect that more than three-fourths of all those admitted will require public or private care during life. Simple justice requires me to add some other unfavorable factors in the histories of these patients, viz: 3 were instances of marked congenital defect; 9 were complicated with epilepsy; and 7 were cases of general paralysis. One of the patients admitted was over 80, and eleven between the ages of 70 and 80 years. In all of these no reasonable hope of recovery can be entertained.

Only one insane convict was transferred from Wethersfield during the year, and the total number of this class at this date is only four.

One of the patients admitted, although having legal papers, appeared to be not insane. After being detained long enough to determine this fact he was discharged, and has continued sound. The history of the case, and the circumstances, would not lead us to question or suspect the motives of the authorities in sending him to the Hospital.

Another male patient was admitted in the delirium of intoxication.

A few days of seclusion and abstinence were sufficient to restore him to normal condition, when he was discharged, doubtless to return with renewed appetite to his depraved habits. In this and all similar instances in previous years, I have tabulated the mental condition of such cases, when discharged, as "Stationary."

Permit me to repeat, what was said in a former Report, that a hospital for the Insane is not a proper place for Inebriates. At the best they cannot be retained long enough to effect a cure. A brief respite from the usual stimulant restores them to sanity and they soon become discontented and a disturbing element in the hospital family.

The youngest person admitted was aged 15 years; one other 16; two 17; four 18, and four 19; thus making 12 persons in one year under 20 years of age. Three of these were defective from birth, and will require care during life; two were restored to health after a few weeks' treatment; and all of the remainder are considered curable.

Of the admissions, 14 cases had recovered their mental health, and 12 cases had died before the end of the year.

Of the 243 persons admitted (see Table IX.) 2 were committed by friends; 222 by Probate Court; 12 by Superior Court; 4 by Police Court; and 3 by orders from the Governor of the State. Table X. shows you how these various classes are supported, as follows: 3 by self or friends (paying); 88 by State and friends (indigents); 140 by State and Towns (paupers); and 12 by State alone.

The civil condition of those admitted is as follows: Single, 132; married, 90; widowed, 19; and unknown, 2.

#### DISCHARGES.

Referring to Table I. you learn that the discharges amount to 125, and include three classes: those who had recovered, 52; those who had improved and were sent home on trial, 25; and those quiet chronic patients who showing no appreciable change, were removed by selectmen or friends, to make room for more urgent cases, 48.

The total recoveries amount to 52, which number, calculated upon the admissions, gives a recovery rate of over 21 per cent., or 5 per cent. less than the rate of last year. The average recovery rate for the preceding ten years has been 22 per cent.

It would be instructive to study in detail the clinical histories of all the cases that terminated in recovery; but space will only permit a glance at two facts: First, the importance of early treatment; and secondly, the advantage of having this treatment away from home.

The average duration of treatment of those who were admitted within one month of the attack was *only five months*. Where the insanity had lasted three months before admission the period of treatment was fifteen months or more.

Of the 52 recoveries only 3 had been insane two years. Nothing could more strikingly illustrate the economy, as well as the importance, of early treatment away from home. It may seem paradoxical, to those who are not familiar with the facts, to assert that strangers and strange surroundings are more conducive to restoration than the devoted attendance of loving friends within the hallowed precincts of home. Experience, however, proves that such is the fact; and this fact seems plausible and rational when it is remembered that persons become insane *at home*, and, perhaps, *because* of home. In other words, many influences at home, such as the drudgery of household cares—incompatibility of temperaments—work and worry, may silently undermine the mental stability until reason is dethroned. I am not wise enough to unravel the tangled web, and point out the particular cause, or the last factor that has produced so much distress. But I have reason to believe that to the mistaken kindness of friends in retaining patients at home during the early stages of mental disease may be attributed the hopelessly chronic character of so many patients when sent to hospitals.

#### DEATHS.

It affords me pleasure to report an absence of epidemic or endemic disease. General good health has prevailed throughout the year among officers, employés, and patients. Extensive removal of earth around the new Hospital led us to expect some form of malarial disease; but thus far, happily, our expectations have not been realized. The total number of deaths (55) is much below the average for the whole period of seventeen years, since the opening of the Hospital, and has only been a fraction less in three of those years. The death rate, calculated from the average number resident, was 6.22, and on the total number under treatment, 4.98. As usual, the mortality among males is larger than among females, owing to the much greater frequency of general paralysis among the former. The cause of death, as verified in 8 cases by post mortem examinations, was general paralysis in 11; tubercular consumption, 8; apoplexy, 7; exhaustion from mania, 5; old age, 4; epileptic coma, 3; pneumonia, 3; Bright's disease of the kidneys, 2; valvular disease of the heart, 2; paralysis, 2; and 1 each from chronic cystitis, marasmus,

suicide, cerebral atrophy, capillary bronchitis, chronic arteritis, accidental drowning, and strangulated hernia.

The average age of all who died was 51.63 years. Two had passed 80; ten were between 70 and 80. The oldest was 85. The following table, showing the deaths and their ratio from the opening of the Hospital to the close of this fiscal year, is given for the benefit of those who are seeking tabular information for the purpose of comparison:

DEATHS AND THEIR RATIOS FROM MAY 1ST, 1868, TO NOV. 30TH, 1884.

Official Year.	Whole Number of Patients.	Daily Average No. of Patients.	DEATHS.			Per Cent on Whole No. of Patients.	Per Cent on Daily Average No. of Patients.
			Males.	Females	Total.		
1868-69,	268	85.47	14	1	15	5.59	17.57
1869-70,	343	225.17	18	3	21	6.12	9.32
1870-71,	307	237.	11	10	21	6.71	8.86
1871-72,	329	242.58	9	6	15	4.55	6.18
1872-73,	336	264.53	12	9	21	6.25	7.86
1873-74,	524	239.51	18	17	35	6.67	10.30
1874-75,	605	425.80	21	15	36	5.95	8.45
1875-76,	616	452.64	26	7	33	5.35	7.31
1876, 8 mos	548	456.97	9	6	15	2.73	3.28
Dec. 1, '76,							
Nov. 30, '77	619	463.88	19	12	31	5.01	6.69
1877-78,	629	474.17	27	13	40	6.36	8.43
1878-79,	644	498.34	9	10	19	2.95	3.81
1879-80,	654	514.63	16	14	30	4.58	5.82
1880-81,	881	608.51	32	12	44	5.00	7.24
1881-82,	1079	789.27	47	32	79	7.32	10.01
1882-83,	1113	854.5	43	37	80	7.18	9.36
1883-84,	1103	883.2	34	21	55	4.98	6.22

The only cases where the causes of death call for remark is one case of suicide, where an old female patient, who had been insane for many years, succeeded in effecting her morbid purpose one Sunday afternoon, while her attendant and associate patients were in Chapel attending Divine worship.

The other was a case of accidental drowning. A male patient who had frequently been in bathing before, while at work with other patients and an attendant at the coal shed near the river, while heated



went into the water, and, most probably, suffered from a cramp. Unfortunately, before aid could reach him, he was taken down by the strong current, and only rescued after life had become extinct. The medical examiner, of this town, promptly and carefully inquired into all the facts in both cases and made proper return to the County Coroner.

#### TREATMENT.

Notwithstanding the marked progress that has been made in the treatment of the insane during the last quarter of a century, it is yet true that our present knowledge of the genesis of mental disease is so vague and ill-defined that the medical treatment remains somewhat empirical. Medical experts have thus far failed to find any miraculous method by which disordered intellects can be restored to normal activity. Careful searching after causes has led to more intelligent conceptions of the nature of insanity, and hence improved methods of treatment. If mental disease is dependent, as I believe, on conditions that are avoidable or removable, and not the necessary concomitants of civilization, then insanity may be regarded as being largely preventable. The transgression of natural physiological laws always results in disease or modification of natural function. Vicious excesses in one generation show their baneful effects in the children of succeeding generations. Unnatural greed engendered by false methods of business tends to excitement, worry, and mental strain. Marriage in consanguinity is followed, sooner or later, by disease or decay. These are only glimpses into the broad field which opens before us, but they are perhaps sufficient to indicate the thought I wish to convey, viz.: whenever society recognizes these great truths and places on our statute book intelligent laws that shall regulate marriage and rigidly control evil excesses, then, and only then, may we hope that in spite of, even by reason of, further advance in civilization, the present rate of development of insanity may undergo not only arrest but diminution.

The great field for future progress, then, lies in the prevention of insanity. But to you, as public guardians, it may be more important to ascertain whether the year's experience covered by this Report has led to any advance in curative measures. I would reply that we have, as never before, made our great family of 1,100 persons comfortable and comparatively happy. As already stated, our work has been largely custodial and in the line of careful nursing, because more than three-fourths of all the patients had been insane from two

to forty years before admission. We have not been able to replace lost faculties or restore morbid nerve tissue, but I am sure we have tried faithfully to use all the means known to medical science in the treatment of recent cases, without neglecting the much larger class of those who must look to the Hospital as their probable home during the remainder of life. So far as possible every case has been treated as an individual case.

Personal nursing, constant and liberal feeding, and careful administration of medicines have constituted the methods pursued in all cases admitted to this Hospital. Liberal, even lavish, treatment of insanity in its early stages is the truest economy, resulting in an increased recovery rate and consequent diminution of the chronic insane. In a previous Report your attention was directed to the necessity of having special wards provided for the epileptic insane. Recognizing the advantage of such provision, you have wisely planned two wards in the new South Hospital, which, when completed, will be used for this class of female patients.

In order to test experimentally the advantage of special care, I set apart one ward of the South Hospital for epileptic males, in which we have treated twenty cases during the past eleven weeks. These patients are under the care of two attendants from time of rising-bell until 7:30 P. M. At night, or from 7:30 P. M., until rising-bell, under the care of special night attendant. The arrangement consists of two large dormitories 24 feet square, separated by a hall 10 feet wide, where the night attendant sits. The doors of the dormitories are always open, so that the attendant can hear and respond to any noise or motion. He is thus able to render assistance during epileptic seizures, preventing such accidents as are liable to result from being smothered in the pillows or falling from bed. The statistics for eleven weeks are as follows: Number of patients, 20; number of epileptic seizures, by day, 150; by night, 308; total, 458; four had seizures only at night; sixteen had more seizures during the night than during the day; and in only four cases was this order reversed. By this arrangement we are better able to watch the effects of remedies, diet and exercise, and at the same time reduce to the minimum the liability to accidents. For the ensuing year we hope to extend this method of special care, until all of the epileptic insane are provided for.

The moral treatment of the patients has been conducted on the same general principles as detailed in previous reports. It has been our aim to classify and group together persons of congenial habits,

and thus promote sociability and good feeling. An atmosphere of quiet contentment has pervaded the house to a degree unlooked for, considering its crowded condition. A glance at the program will show that there has been no falling off in the various amusements and recreations, provided during the winter, while in summer all are permitted or required to spend several hours of each pleasant day out of doors. The privilege of limited and unlimited parole has been extended to a degree that would have been considered hazardous, if not impossible, ten years ago. Occupation continues as heretofore, to form a prominent feature in the administration of this Hospital, the daily records showing that more than 50 per cent. of both sexes, have been usefully and profitably employed, on the farm and grounds, or in the kitchen, laundry, sewing-room, or general house work. If we had a large inexpensive building which could be used for shop purposes, I am sure many more of our patients could be occupied at brush or broom making during the winter months when out door work is not practicable.

#### ESCAPES.

The enlargement of parole, previously mentioned, has not resulted in an increased number of escapes. During the year only 34 persons (last year 40) wandered off without permission. Of this number, 2 returned voluntarily within a few hours; 16 were brought back after an average absence of four and one-half hours; 13 were returned within three or four days; 1 reached home safely, so much improved that it was considered best to have him remain. Only two are still at large. As both of these men had recovered and were soon to be discharged, we have overlooked the apparent want of courtesy shown in their hasty departure, and have made no efforts to secure their return.

Whenever practicable it is our custom to send patients to their homes for a visit, or on trial, previous to their discharge. This course is followed in order that the convalescent should be under supervision during his first return to cares and occupations of active life. In case of relapse before the expiration of the period of probation, he can be returned without the delay of procuring new papers.

#### REPAIRS AND IMPROVEMENTS.

Believing that true economy consists in preserving and improving the buildings and appliances which have been erected under your supervision, we have continued making such repairs as the funds at

our disposal would permit. A full record of all these improvements would require more space than I have at command. Among the most important may be mentioned the completion and occupancy in April of the Infirmary wards for the more excitable female patients; a large sunny day room and two single rooms in connection with Ward A; finishing off six rooms in the attic of South Hospital; the erection of a large brick meat house and cooling room; new roof over boiler-house, Main Hospital; new shingle roofs over the farm cottage and the Fallon house; repainting the entire outside wood-work of Main Hospital; relaying floors at Silver-mine cottage; cementing floors in butter room, tramways and closets; placing gas lamp over south door of Annex, and near the walk midway between Main and South Hospitals; together with many minor repairs as they have been needed from day to day. To those of you who are most familiar with the daily working of the Hospital it must be evident that the Institution is in better condition than at any previous date.

#### FINANCIAL EXHIBIT.

It affords me pleasure to say that the expense of maintenance, together with repairs and improvements, has been met by the annual earnings of the Hospital. It may be proper also to mention that the Hospital has not called upon the State to make special appropriations for maintenance since its opening in 1868. In other words, the Hospital has been conducted within its receipts and earnings. The price of board for all during the year has been \$3.75 per week. This covers everything except clothing, which is, from choice, generally furnished by friends. If staple provisions remain as at present cost, the weekly charge can be reduced to \$3.50 without lowering the standard already established.

The appended Financial Report shows that the revenues for the year were \$185,705.32, and the payments \$184,856.70. All bills have been audited and paid monthly.

#### THE FARM.

Under Mr. Sanderson's judicious management, the farm continues to be a source of profit to the Institution and of pleasure to those of the men who are able and willing to work. In this way, fresh vegetables, berries, fruits, and milk are provided liberally.

In addition to the labor performed in the garden and on the farm, much work has been done under Col. Thayer's direction in grading



about the new Hospital. In this inexpensive way, a rough, wet and unsightly ravine has been transformed into an attractive slope, with a pond and fountain to add beauty and freshness to the whole scene. For the ensuing year many patients can be pleasantly employed in this healthful way. I often wish that we had some useful out-door employment for the female patients. Their work seems to be restricted to domestic labor in-doors; why not set apart a large garden spot for their especial use, and allow them to have the entire charge of it? The experiment is certainly worthy of trial. If successful, the advantages of such a project can be scarcely overestimated.

#### ENTERTAINMENTS.

Again, I have to thank many friends for their assistance in giving private theatrical performances, concerts, lectures and readings, and our assistant, Dr. Olmstead, has been indefatigable in managing most perfectly these modes of treatment.

The amusements provided for the patients have been as varied, and more numerous than in any previous year.

We value them, not only for the good done at the time, but for the good service they do in rousing patients to prepare for them; and they are good as leaving memories which take the patient's attention from himself.

At Christmas we had a large Tree, and a distribution of presents given by the friends, and every patient received some token of remembrance. The following is a partial list of the evening entertainments:

Sociable, with dancing,	-	-	-	-	-	10	evenings.
Lectures, illustrated with Stereopticon,	-	-	-	-	-	3	"
Roller Skating,	-	-	-	-	-	9	"
Dramatic Entertainment, Hospital Troup,	-	-	-	-	-	3	"
" " Miss Briggs and pupils,	-	-	-	-	-	1	"
Concert, Wesleyan Glee Club,	-	-	-	-	-	1	"
Musical Entertainment, Hospital Troupe,	-	-	-	-	-	3	"
Christmas Tree and Concert,	-	-	-	-	-	1	"
Reading, Miss Nettie Jackson,	-	-	-	-	-	1	"
" Rev. Geo. Lyon, Jr.,	-	-	-	-	-	1	"
" Prof. R. G. Hibbard,	-	-	-	-	-	1	"
" Mrs. Edna Chaffee Noble,	-	-	-	-	-	1	"
Lecture, Ventriloquism, H. F. Bryant,	-	-	-	-	-	1	"
" "John Wycliff," Rev. T. W. Coit, D.D.,	-	-	-	-	-	1	"
" "China," S. C. Partridge,	-	-	-	-	-	1	"

Lecture, "Coral and the Coral Islands," Rev. J.							
Wycliff Beach,	-	-	-	-	1	evenings.	
" " "The Jeannette Expedition," Raymond							
Lee Newcomb,	-	-	-	-	1	"	
" " "Alaska," Chas. Northend,					1	"	
"An evening with Whittier," Young People's							
Association of the M. E. Church,	-	-	-	-	1	"	
Masquerade Party,	-	-	-	-	-	1	"
Out door concerts, Hospital Band,	-	-	-	-	36	"	

## DONATIONS.

In addition to many gifts made to individuals, the following donations, which I acknowledge with sincere pleasure, were received and used for the general good:

From Mr. R. S. Fellows, New Haven, Conn., subscription for the year, three copies of the "Sailors' Magazine," six copies "Sunday Reading," and four calendars of American History.

From the estate of Frederic Marquand, \$150 towards the purchase of a piano for the chapel.

Mrs. E. B. Monroe, of Southport, Conn., three large packages of books and magazines.

H. D. A. Ward, Esq., Middletown, several books, magazines, and illustrated papers.

Miss Mary P. Roberts, of Albany, N. Y., twenty books and pamphlets.

J. A. Sumner, Middletown, one volume entitled "Sport with Rod and Gun."

Mrs. Francis A. Ward, Middletown, a package of illustrated papers.

T. S. Gold, Secretary State Board of Agriculture, 13 copies of Agricultural Reports.

Jonathan Kilbourn, Esq., Middletown, package of papers.

M. B. Copeland, Esq., 13 bound volumes, and 21 paper covered novels; also, contribution to the costumes in the amusement hall.

Mr. F. B. Weeks, package of illustrated papers.

Mrs. J. B. Evans, Middletown, package of newspapers.

Mrs. C. A. Piddock, Middletown, package of religious papers.

Henry Bill Publishing Co., Norwich, Conn., one copy of Blaine's Twenty Years in Congress.

Also from the publishers of the following newspapers, gratuitous copies furnished during the year:

The Courant, daily, Hartford.  
 The Post, daily, Hartford.  
 The Times, weekly, Hartford.  
 Religious Herald, weekly, Hartford.  
 The Palladium, weekly, New Haven.  
 Tolland County Journal, weekly, Rockville.  
 Tolland County Leader, weekly, Rockville.  
 Sheltering Arms, monthly, New York.  
 The Herald, daily, Middletown.  
 The Constitution, weekly, Middletown.  
 The Sentinel and Witness, weekly, Middletown.  
 The Enterprise, weekly, Naugatuck.  
 The Review, weekly, Naugatuck.  
 Bridgeport Standard, weekly, Bridgeport.  
 Weekly Witness, weekly, New York.  
 The Transcript, weekly, Portland, Me.  
 The Regions Beyond, monthly, London, Eng.

#### SUNDAY RELIGIOUS SERVICES.

The following clergymen kindly conducted the chapel services during the year:

Rev. T. W. Coit, D. D.,	-	-	-	-	-	Middletown, Conn.
Rev. Wm. C. Foster,	-	-	-	-	-	Middletown, Conn.
Rev. John Townsend,	-	-	-	-	-	Middletown, Conn.
Rev. A. W. Hazen,	-	-	-	-	-	Middletown, Conn.
Rev. Geo. Westgate,	-	-	-	-	-	Middletown, Conn.
Rev. W. A. Richards,	-	-	-	-	-	Middletown, Conn.
Rev. Geo. Lyon, Jr.,	-	-	-	-	-	Boston, Mass.
Rev. J. W. Tuck,	-	-	-	-	-	Middletown, Conn.
Rev. H. R. Phoenix,	-	-	-	-	-	Middletown, Conn.
Rev. P. M. Snyder,	-	-	-	-	-	Middletown, Conn.
Rev. F. Gardiner, D. D.,	-	-	-	-	-	Middletown, Conn.
Rev. C. A. Piddock,	-	-	-	-	-	Middletown, Conn.
Rev. F. S. Hoffman,	-	-	-	-	-	Middletown, Conn.
Rev. Samuel Hopley,	-	-	-	-	-	Middletown, Conn.
Rev. Richard L. de Zeng,	-	-	-	-	-	Middletown, Conn.
Rev. Frank L. Hayward,	-	-	-	-	-	Middletown, Conn.
Rev. Harrison Closson,	-	-	-	-	-	Middletown, Conn.
Rev. William Allen Johnson, D. D.,	-	-	-	-	-	Middletown, Conn.
Rev. J. S. Bayne,	-	-	-	-	-	Portland, Conn.
Rev. C. H. Bond,	-	-	-	-	-	Middletown, Conn.
Rev. R. Povey,	-	-	-	-	-	Portland, Conn.

Rev. W. V. Kelly,	-	-	-	-	-	-	<i>Middletown, Conn.</i>
Rev. E. P. Hammond,	-	-	-	-	-	-	<i>Vernon, Conn.</i>
Rev. S. A. Hayt,	-	-	-	-	-	-	<i>Watertown, N. Y.</i>
Rev. A. C. Denison,	-	-	-	-	-	-	<i>Middletown, Conn.</i>
Rev. Mr. McDuffy,	-	-	-	-	-	-	<i>North Carolina.</i>
Rev. Geo. Prentice,	-	-	-	-	-	-	<i>Middletown, Conn.</i>

## CONCLUSION.

It seems but a few days since we were engaged, as to-day, in reviewing the events of the previous fiscal year. Measured by weeks, the time has passed quickly. If all the joys and sorrows, the anxieties and labors, could be measured, this period would seem an age. In a house so crowded as this has been, during the past year, an unusual amount of work and care has been thrown upon all connected with its management.

Standing at its close we have reason to rejoice that so much good has been accomplished, with so few causes for regret. The staff of officers remains the same with one exception. In April Miss Parker, the efficient housekeeper at the South Hospital, resigned her office to occupy another of more honor and responsibility. Her place has been judiciously filled by the appointment of Mrs. Ella Waite. I feel under great obligations to the medical and other administrative officers for their cordial and harmonious co-operation in all matters pertaining to the good of the Institution, and the comfort and welfare of those committed to its care. For your kindness and courtesy throughout the year, and during the whole period of my official connection with this Institution—now more than eighteen years—I beg you to accept my sincere acknowledgments.

Respectfully submitted,

ABRAM MARVIN SHEW, M. D.,

*Superintendent.*

MIDDLETOWN, CONN., November 30th, 1884.



# Farmer's Report.

---

To the Superintendent:

*Quantity and Value of Products.*

Hay, - - - -	119 tons, - -	\$2,023 00
Corn Fodder, - -	12 " - -	108 00
Ensilage, - - -	210 " - -	840 00
Straw, - - - -	13 " - -	169 00
Rye, - - - -	170 bushels, -	102 00
Potatoes, - - -	3,032 " - -	1,818 00
Carrots, - - -	145 " - -	58 00
Beets, - - - -	287 " - -	114 80
Spinach, - - -	33 " - -	23 10
Beet Greens, - -	171 " - -	102 60
Beets, Mangolds, -	170 " - -	68 00
Onions, - - - -	255 " - -	153 00
Turnips, - - -	427 " - -	106 75
Beans (String), -	32 " - -	32 00
Beans (in Shell), -	94 " - -	94 00
Peas, - - - -	70 " - -	98 00
Parsnips, - - -	137 " - -	61 65
Sweet Corn, - -	745 " - -	409 75
Cucumbers, - - -	147 " - -	110 75
Tomatoes, - - -	54 " - -	32 40
Squash, - - - -	105 " - -	78 75
Radishes, - - -	8 " - -	8 00
Currants, - - -	8 " - -	20 00

Pears, - - - -	35 bushels,	-	\$35 00
Apples, - - - -	580 "	-	348 00
Cider, - - - -	2,970 gallons,	-	297 00
Lettuce, - - - -	1,000 heads, -	-	10 00
Cabbage, - - - -	5,000 "	-	200 00
Celery, - - - -	3,300 "	-	132 00
Melons, - - - -	9,775 pounds,	-	195 50
Asparagus, - - -	170 "	-	18 70
Beef, - - - -	8,317 "	-	733 28
Veal, - - - -	101 "	-	10 10
Pork, - - - -	14,908 "	-	1,192 24
Chickens, - - - -	265 "	-	46 90
Strawberries, - -	1,286 quarts,	-	192 90
Milk (grass fed), -	69,584 "	-	3,479 20
Pigs (sold), - -	90	-	352 75
Calves (sold), - -	30	-	51 50
Calf Skins (sold), -	1	-	1 25
Eggs, - - - -	520 dozen,	-	109 20
<hr/>			
Total, - - - -	- - - -	-	\$14,037 07

The farm stock consists of fifteen horses, six oxen, one bull, fifty-five cows, four calves, one boar, fourteen breeding sows, forty fat hogs, seventy-eight shot, and one hundred and fifty hens.

Respectfully submitted,

P. W. SANDERSON,

*Farmer.*

*TABLE I.*  
MOVEMENT OF THE POPULATION.

	Males.	Females.	Total.
Number at the beginning of the year, -	392	468	860
Admitted in the year, - - - -	121	122	243
Total present in the year, - - -	513	590	1103
Discharged,—Recovered, - - - -	26	26	52
Improved, - - - -	12	13	25
Stationary, - - - -	28	20	48
Died, - - - -	34	21	55
Remaining at the end of the year, -	413	510	923
Average present during the year, - -	402.58	480.64	883.22

*TABLE II.*  
ADMISSIONS AND DISCHARGES FROM THE BEGINNING OF THE HOSPITAL.

	Males.	Females.	Total.
Admitted, - - - - -	1740	1455	3195
Discharged,—Recovered, - - - -	369	294	663
Improved, - - - -	267	223	490
Stationary, - - - -	326	203	529
Died, - - - -	365	225	590

*Average Number Present Each Year from the Beginning.*

Years.	Males.	Females.	Total.
1868-69, - - - - -	79.35	6.12	85.47
1869-70, - - - - -	110.63	114.54	225.17
1870-71, - - - - -	115.97	117.72	233.69
1871-72, - - - - -	124.21	118.44	242.65
1872-73, - - - - -	132.11	132.43	264.54
1873-74, - - - - -	146.43	193.29	339.72
1874-75, - - - - -	198.54	227.19	425.73
1875-76, - - - - -	225.60	227.02	452.62
1876—April 1st to Nov. 30th, - -	228.39	228.57	456.97
1876-77, - - - - -	231.45	232.43	463.88
1877-78, - - - - -	236.11	238.06	474.17
1878-79, - - - - -	244.57	253.76	498.34
1879-80, - - - - -	250.68	263.95	514.63
1880-81, - - - - -	293.17	315.39	608.51
1881-82, - - - - -	357.26	432.01	789.27
1882-83, - - - - -	385.61	468.89	854.50
1883-84, - - - - -	402.58	480.64	883.22

TABLE III.

NUMBER AT EACH AGE WHEN ADMITTED DURING THE YEAR.

AGE.	When Admitted.			When Attacked.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 15, -	—	—	—	4	1	5
15 to 20, - -	7	6	13	8	16	24
20 to 25, - -	11	12	23	21	16	37
25 to 30, - -	21	18	39	24	22	46
30 to 35, - -	21	10	31	14	15	29
35 to 40, - -	15	15	30	8	14	22
40 to 45, - -	14	24	38	8	11	19
45 to 50, - -	10	8	18	5	9	14
50 to 60, - -	6	15	21	7	5	12
60 to 70, - -	9	9	18	2	7	9
70 to 80, - -	5	5	10	2	2	4
80 and over, -	1	—	1	—	—	—
Unknown, - -	—	—	—	17	4	21
Not Insane, -	1	—	1	1	—	1
Total, - -	121	122	243	121	122	243

TABLE IV.

NUMBER AT EACH AGE FROM THE BEGINNING OF THE HOSPITAL.

AGE.	When Admitted.			When Attacked.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 15, -	7	2	9	48	15	63
15 to 20, - -	76	50	126	130	103	233
20 to 25, - -	196	153	349	227	202	429
25 to 30, - -	244	170	414	231	228	459
30 to 35, - -	221	172	393	211	184	395
35 to 40, - -	223	198	421	184	195	379
40 to 45, - -	176	188	364	135	140	275
45 to 50, - -	146	152	298	117	121	238
50 to 60, - -	207	188	395	167	132	299
60 to 70, - -	136	110	246	112	53	165
70 to 80, - -	58	41	99	31	28	59
80 and over, -	13	17	30	6	9	15
Unknown, - -	5	7	12	109	38	147
Not Insane, -	32	7	39	32	7	39
Total, - -	1740	1455	3195	1740	1455	3195



*TABLE V.*  
NATIVITY OF PATIENTS ADMITTED.

NATIVITY.	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Connecticut, - -	60	55	115	960	663	1623
Florida, - - -	—	—	—	2	—	2
Georgia, - - -	—	—	—	—	1	1
Iowa, - - -	—	—	—	1	—	1
Louisiana, - -	—	—	—	1	2	3
Maine, - - -	1	—	1	6	3	9
Maryland, - -	—	—	—	3	1	4
Massachusetts, -	3	2	5	49	22	71
Michigan, - -	—	—	—	1	1	2
New Hampshire, -	1	—	1	3	1	4
New Jersey, - -	2	—	2	13	3	16
New York, - -	7	5	12	96	75	171
North Carolina, -	2	—	2	8	—	8
Ohio, - - -	1	—	1	1	1	2
Pennsylvania, - -	1	—	1	8	4	12
Rhode Island, - -	2	—	2	23	13	36
South Carolina, -	—	—	—	2	—	2
Tennessee, - -	—	—	—	1	—	1
Vermont, - - -	—	—	—	5	4	9
Virginia, - - -	—	1	1	4	9	13
Canada, Dominion of,	—	—	—	19	8	27
Bermuda, - - -	—	—	—	1	—	1
Cuba, - - -	—	—	—	—	2	2
Austria, - - -	—	—	—	—	2	2
Denmark, - - -	—	1	1	1	1	2
England, - - -	4	5	9	61	47	108
France, - - -	—	1	1	5	4	9
Germany, - - -	7	9	16	75	69	144
Ireland, - - -	26	38	64	339	486	825
Italy, - - -	—	1	1	2	4	6
Norway, - - -	—	—	—	2	—	2
Russia, - - -	—	1	1	1	2	3
Scotland, - - -	1	—	1	10	14	24
Spain, - - -	1	—	1	2	—	2
Sweden, - - -	—	1	1	14	6	20
Switzerland, - -	1	—	1	7	—	7
Wales, - - -	—	—	—	1	—	1
Unknown, - - -	1	2	3	13	7	20
Total, - - -	121	122	243	1740	1455	3195

*TABLE VI.*  
RESIDENCE OF PATIENTS ADMITTED.

RESIDENCE.	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
State at Large, -	12	—	12	118	22	140
Hartford County, -	27	32	59	381	316	697
New Haven “ -	26	36	62	425	442	867
New London “ -	11	11	22	172	156	328
Windham “ -	2	4	6	48	51	99
Litchfield “ -	14	9	23	101	105	206
Middlesex “ -	9	5	14	177	124	301
Tolland “ -	1	2	3	42	52	94
Fairfield “ -	19	23	42	266	185	451
Elsewhere, “ -	—	—	—	10	2	12
Total, - - -	121	122	243	1740	1455	3195

*TABLE VII.*  
OCCUPATION OF THOSE ADMITTED.

OCCUPATION.	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Accountants, - - - -	2	—	2	18	—	18
Actors, - - - -	1	—	1	2	2	4
Agents, - - - -	1	—	1	12	—	12
Artists, - - - -	1	—	1	2	1	3
Bakers, - - - -	—	—	—	1	—	1
Barbers, - - - -	1	—	1	5	—	5
Bar Tenders, - - - -	1	—	1	3	—	3
Blacksmiths, - - - -	2	—	2	21	—	21
Boiler Makers, - - - -	—	—	—	3	—	3
Book Binders, - - - -	—	—	—	1	2	3
Brewers, - - - -	—	—	—	1	—	1
Brokers, - - - -	—	—	—	1	—	1
Brush Makers, - - - -	—	—	—	2	—	2
Butchers, - - - -	—	—	—	7	—	7
Cabinet Makers, - - - -	—	—	—	8	—	8
Carmen, - - - -	—	—	—	2	—	2
Carpenters, - - - -	1	—	1	46	—	46
Carriage Makers, - - - -	—	—	—	8	—	8
Chemists, - - - -	—	—	—	1	—	1
Cigar Makers, - - - -	—	—	—	12	1	13
Clerks, - - - -	1	—	1	39	—	39
Clergymen, - - - -	—	—	—	4	—	4
Clock Makers, - - - -	—	—	—	1	—	1
Coachmen, - - - -	1	—	1	8	—	8
Commercial Travelers, - - - -	1	—	1	8	—	8
Coopers, - - - -	—	—	—	2	—	2
Curriers, - - - -	—	—	—	4	—	4
Cutlers, - - - -	—	—	—	2	—	2
Domestics, - - - -	—	29	29	—	294	294
Druggists, - - - -	1	—	1	9	—	9
Dyers, - - - -	1	—	1	5	—	5
Electro-Platers, - - - -	1	—	1	3	—	3
Engineers, - - - -	—	—	—	3	—	3
Factory Employees, - - - -	7	8	15	108	78	186
Farmers, - - - -	25	—	25	334	—	334
Fish Hook Makers, - - - -	—	—	—	2	—	2
Fishermen, - - - -	—	—	—	2	—	2
Gardeners, - - - -	1	—	1	11	—	11
Glass Cutters, - - - -	—	—	—	1	—	1
Gunsmiths, - - - -	—	—	—	2	—	2
Harness Makers, - - - -	—	—	—	12	—	12
Hatters, - - - -	1	—	1	14	1	15
Hostlers, - - - -	1	—	1	13	—	13
Housekeepers, - - - -	—	15	15	—	120	120
Housewives, - - - -	—	44	44	—	580	580
Janitors, - - - -	—	—	—	1	—	1
Jewelers, - - - -	—	—	—	3	—	3
Journalists, - - - -	1	—	1	1	—	1

TABLE VII.—Continued.  
OCCUPATION OF THOSE ADMITTED.

OCCUPATION.	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Laborers, - - - - -	35	—	35	342	—	342
Landlords, - - - - -	—	—	—	1	—	1
Lawyers, - - - - -	—	—	—	5	—	5
Lumbermen, - - - - -	—	—	—	1	—	1
Machinists, - - - - -	4	—	4	57	—	57
Manufacturers, - - - - -	—	—	—	20	—	20
Masons, - - - - -	1	—	1	21	—	21
Mechanics, - - - - -	6	—	6	117	—	117
Merchants, - - - - -	1	—	1	55	1	56
Millers, - - - - -	—	—	—	2	—	2
Milliners, - - - - -	—	1	1	—	4	4
Moulders, - - - - -	1	—	1	12	—	12
News Boys, - - - - -	—	—	—	3	—	3
Night Watchmen, - - - - -	—	—	—	8	—	8
No Employment, - - - - -	5	17	22	118	212	330
Nurse, - - - - -	—	—	—	—	1	1
Painters, - - - - -	2	—	2	31	—	31
Plumbers, - - - - -	1	—	1	2	—	2
Peddlers, - - - - -	—	—	—	6	1	7
Physicians, - - - - -	1	—	1	6	—	6
Pilots, - - - - -	—	—	—	3	—	3
Powder Makers, - - - - -	—	—	—	1	—	1
Printers, - - - - -	1	—	1	6	1	7
Pump Makers, - - - - -	—	—	—	1	—	1
Quarrymen, - - - - -	—	—	—	17	—	17
Railroad Employees, - - - - -	2	—	2	13	—	13
Rubber Workers, - - - - -	—	—	—	2	—	2
Sailors, - - - - -	1	—	1	25	—	25
Sail Makers, - - - - -	—	—	—	2	—	2
Saloon Keepers, - - - - -	—	—	—	6	—	6
Seamstresses, - - - - -	—	4	4	—	46	46
Soldiers, - - - - -	—	—	—	1	—	1
Shoe Makers, - - - - -	—	—	—	19	—	19
Students, - - - - -	—	—	—	9	13	22
Speculators, - - - - -	—	—	—	1	—	1
Stone Cutters, - - - - -	1	—	1	2	—	2
Tailors, - - - - -	2	—	2	15	8	23
Teachers, - - - - -	3	3	6	15	49	64
Telegraph Operators, - - - - -	—	—	—	3	—	3
Tinsmiths, - - - - -	2	—	2	8	—	8
Truss Makers, - - - - -	—	—	—	1	—	1
Unknown, - - - - -	—	1	1	16	30	46
Upholsterers, - - - - -	—	—	—	3	—	3
Waiters, - - - - -	—	—	—	6	—	6
Weavers, - - - - -	—	—	—	6	9	15
Wire Weavers, - - - - -	—	—	—	1	—	1
Wood Carvers, - - - - -	—	—	—	3	1	4
Total, - - - - -	121	122	243	1740	1455	3194

## TABLE VIII.

## CIVIL CONDITION OF THOSE ADMITTED.

	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Single, - - - -	77	55	132	877	611	1488
Married, - - - -	37	53	90	719	613	1332
Widowed, - - - -	6	13	19	108	199	307
Unknown, - - - -	1	1	2	36	32	68
Total, - - - -	121	122	243	1740	1455	3195

## TABLE IX.

## HOW COMMITTED.

	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
By Friends, - - - -	1	1	2	126	81	207
Probate Judges, - - - -	103	119	222	1406	1340	2746
Judges of Superior Courts, -	10	2	12	101	10	111
Governor's Orders, - - - -	3	—	3	62	7	69
Justice or Police Courts, - -	4	—	4	44	17	61
Order of General Assembly,	—	—	—	1	—	1
Total, - - - -	121	122	243	1740	1455	3195

## TABLE X.

## HOW SUPPORTED.

	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
By Self or Friends (paying),	2	1	3	129	79	208
By State and Friends (indigent)	37	51	88	491	540	1031
By State and Town (pauper),	70	70	140	980	813	1793
By State alone, - - - -	12	—	12	140	23	163
Total, - - - -	121	122	243	1740	1455	3195



## TABLE XI.

## FORM OF DISEASE IN THOSE ADMITTED.

FORM OF DISEASE.	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Mania—Acute, - - -	18	25	43	460	344	804
Chronic, - - -	33	47	80	485	547	1032
Epileptic, - - -	5	4	9	90	46	136
Hysterical, - - -	—	—	—	—	3	3
Puerperal, - - -	—	2	2	—	35	35
Suicidal, - - -	—	—	—	4	5	9
Homicidal, - - -	1	—	1	5	3	8
Recurrent, - - -	5	2	7	25	23	48
Delirium, Simple, - - -	—	—	—	12	—	12
Monomania, - - -	—	—	—	15	4	19
Melancholia—Acute, - - -	17	20	37	183	194	377
Chronic, - - -	10	8	18	84	97	181
Attonita, - - -	—	—	—	6	3	9
General Paresis, - - -	5	2	7	60	4	64
Methomania, - - -	1	—	1	81	4	85
Dementia—Acute, - - -	—	—	—	14	16	30
Chronic, - - -	18	9	27	95	67	162
Senile, - - -	4	3	7	41	41	82
Imbecility, - - -	3	—	3	46	12	58
Neurasthenia, - - -	—	—	—	2	—	2
Not Insane, - - -	1	—	1	32	7	39
Total, - - -	121	122	243	1740	1455	3195

## TABLE XII.

## COMPLICATIONS (OF NERVOUS SYSTEM) IN THOSE ADMITTED.

COMPLICATIONS.	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Aphasia, - - -	—	—	—	6	—	6
Apoplexy, - - -	—	—	—	6	—	6
Chorea, - - -	—	1	1	5	6	11
Epilepsy, - - -	5	4	9	90	46	136
Hemiplegia, - - -	—	—	—	6	5	11
Hysteria, - - -	—	2	2	—	6	6
Hereditary Tendency, - - -	31	17	48	416	331	747
Paraplegia, - - -	—	1	1	2	4	6
Paralysis Agitans, - - -	—	—	—	1	1	2
Pseudo Hypertrophic Paralysis	—	—	—	—	1	1
Prog. Muscular Atrophy, - - -	—	—	—	1	1	2
Spinal Paralysis, - - -	—	—	—	1	—	1
Without Complications, - - -	85	97	182	1206	1054	2260
Total, - - -	121	122	243	1740	1455	3195

## TABLE XIII.

## NUMBER OF ATTACKS IN THOSE ADMITTED.

	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
First, - - - - -	96	96	192	1221	1094	2315
Second, - - - - -	11	16	27	182	173	355
Third, - - - - -	3	4	7	49	60	109
Fourth, - - - - -	1	2	3	25	20	45
Fifth, - - - - -	—	2	2	7	14	21
Sixth, - - - - -	2	—	2	6	6	12
Seventh, - - - - -	—	2	2	4	6	10
Eighth, - - - - -	—	—	—	1	4	5
Several, - - - - -	2	—	2	43	18	61
Unknown, - - - - -	5	—	5	170	53	223
Not Insane, - - - - -	1	—	1	32	7	39
Total, - - - - -	121	122	243	1740	1455	3195

## TABLE XIV.

## DURATION OF INSANITY BEFORE ENTRANCE OF THOSE ADMITTED.

	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Less than 1 month, - -	8	17	25	239	176	415
1 to 3 months, - - -	11	10	21	238	157	395
3 to 6 " - - - - -	13	17	30	159	148	307
6 to 9 " - - - - -	10	6	16	95	93	188
9 to 12 " - - - - -	1	1	2	69	48	117
12 to 18 " - - - - -	14	13	27	109	114	223
18 to 24 " - - - - -	6	1	7	63	57	120
2 to 3 years, - - - -	9	14	23	148	136	284
3 to 5 " - - - - -	9	15	24	136	145	281
5 to 10 " - - - - -	13	13	26	141	150	291
10 to 15 " - - - - -	7	7	14	75	65	140
15 to 20 " - - - - -	—	1	1	29	41	70
20 to 25 " - - - - -	3	—	3	24	18	42
25 to 30 " - - - - -	1	2	3	16	9	25
30 and over, - - - -	2	4	6	14	28	42
Unknown, - - - - -	13	1	14	153	63	216
Not Insane, - - - - -	1	—	1	32	7	39
Total, - - - - -	121	122	243	1740	1455	3195

## TABLE XV.

RECOVERED OF THOSE ATTACKED AT THE SEVERAL AGES FROM  
THE BEGINNING.

AGE.	Number Recovered.			Per Cent Recovered of those Attacked from the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 15, -	—	—	—	—	—	—
15 to 20, - -	20	23	43	15.38	22.33	18.45
20 to 25, - -	58	44	102	25.55	21.78	23.77
25 to 30, - -	56	48	104	24.24	21.05	22.65
30 to 35, - -	51	37	88	24.17	20.10	22.27
35 to 40, - -	53	34	87	28.80	17.43	23.95
40 to 45, - -	37	35	72	27.40	25.00	26.16
45 to 50, - -	33	21	54	28.20	17.35	18.12
50 to 60, - -	35	39	74	20.95	29.54	24.74
60 to 70, - -	22	9	31	19.64	16.97	18.72
70 to 80, - -	3	4	7	9.93	14.28	11.86
Over 80, - -	1	—	1	16.66	—	6.66
Total, - -	369	294	663			

## TABLE XVI.

RECOVERED AFTER VARIOUS DURATIONS OF DISEASE BEFORE  
TREATMENT FROM THE BEGINNING.

DURATION.	Number Recovered.			Per Cent Recovered.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 1 month,	141	85	226	58.95	48.29	54.45
1 to 3 months,	105	65	170	41.11	41.27	43.03
3 to 6 " -	43	53	96	27.04	35.81	31.27
6 to 9 " -	25	26	51	26.31	27.96	27.18
9 to 12 " -	16	13	29	23.18	27.07	24.78
1 to 2 years, -	19	24	43	11.04	14.03	12.47
2 to 3 " -	9	9	18	6.08	6.76	6.33
3 to 5 " -	7	11	18	5.14	7.58	6.40
5 to 10 " -	4	7	11	2.83	4.66	3.78
Over 10 " -	—	1	1	—	.62	.31
Total, - -	369	294	663			

## TABLE XVII.

DURATION OF TREATMENT OF THOSE RECOVERED FROM THE BEGINNING.

DURATION.	Number Recovered.		
	Males.	Females.	Total.
Under 1 month, - - - - -	54	16	70
1 to 2 months, - - - - -	63	32	95
2 to 3 " - - - - -	57	55	112
3 to 6 " - - - - -	87	80	167
6 to 9 " - - - - -	38	34	72
9 to 12 " - - - - -	27	20	47
12 to 18 " - - - - -	24	23	47
18 to 24 " - - - - -	3	12	15
2 to 3 years, - - - - -	8	9	17
3 to 5 " - - - - -	7	10	17
Over 5 " - - - - -	1	3	4
Total, - - - - -	369	294	663
Average duration of all, - - -	6.18 mos.	8.27 mos.	7.27 mos.

## TABLE XVIII.

WHOLE DURATION OF DISEASE OF THOSE RECOVERED FROM THE BEGINNING.

DURATION.	Number Recovered.		
	Males.	Females.	Total.
Under 1 month, - - - - -	35	10	45
1 to 2 months, - - - - -	57	20	77
2 to 3 " - - - - -	28	19	47
3 to 6 " - - - - -	77	56	133
6 to 9 " - - - - -	45	54	99
9 to 12 " - - - - -	35	31	66
12 to 18 " - - - - -	36	33	69
18 to 24 " - - - - -	14	17	31
2 to 3 years, - - - - -	19	18	37
3 to 5 " - - - - -	15	19	34
Over 5 " - - - - -	8	17	25
Total, - - - - -	369	294	663
Average duration of all, - - -	10.37 mos.	15.13 mos.	11.85 mos.



## TABLE XIX.

FORM OF DISEASE OF THOSE RECOVERED FROM THE BEGINNING.

DISEASE.	Number Recovered.			Per Cent Recovered of each Form Admitted.		
	Males.	Females.	Total.	Males.	Females.	Total.
Mania—Acute, - - -	215	122	337	46.73	34.88	41.91
Chronic, - - -	17	48	65	3.50	8.79	6.29
Epileptic, - - -	3	1	4	3.33	2.17	2.94
Hysterical, - - -	—	2	2	—	66.66	66.66
Puerperal, - - -	—	20	20	—	60.00	60.00
Recurrent, - - -	7	10	17	28.00	43.47	35.41
Suicidal, - - -	—	2	2	—	100.00	100.00
Delirium, Simple, - - -	12	—	12	100.00	100.00	100.00
Dementia, Acute, - - -	3	4	7	21.42	25.00	23.33
Monomania, - - -	4	1	5	26.66	25.00	26.31
Methomania, - - -	31	4	35	38.27	100.00	41.17
Melancholia, Acute, - - -	68	60	128	37.15	30.92	33.95
Chronic, - - -	8	20	28	9.52	20.61	15.46
Neurasthenia, - - -	1	—	1	50.00	—	50.00
Total, - - - -	369	294	663			

## TABLE XX.

CAUSE (EXCITING) OF DISEASE OF THOSE RECOVERED FROM THE BEGINNING.

CAUSE.	Number Recovered.			Per Cent Recovered of each Class Admitted.		
	Males.	Females.	Total.	Males.	Females.	Total.
Anx. of mind, bus. & otherwise	25	19	44	26.59	38.00	30.55
Connected with the affections,	21	21	42	41.17	21.67	28.37
Connected with fluctuations of fortune, - - -	9	2	11	37.50	15.37	29.72
Connected with religion, - - -	13	14	27	41.93	34.14	37.50
Domestic Difficulties, - - -	2	12	14	18.18	26.66	25.00
Epilepsy, - - -	3	1	4	3.37	2.22	2.91
Excessive Venery, - - -	4	—	4	23.52	—	—
Fevers, - - -	1	1	2	11.11	10.00	10.52
Ill-Health, - - -	40	58	98	27.77	25.10	26.13
Intemperance, - - -	97	13	110	37.16	32.50	36.54
Injuries to Nervous System,	7	5	12	21.87	71.42	30.76
Masturbation, - - -	10	3	13	9.70	16.66	10.74
Menopausis, - - -	—	2	2	—	8.69	8.69
Nostalgia, - - -	—	1	1	—	25.00	14.28
Over-study, - - -	1	2	3	12.50	14.28	13.63
Puerperal, Pregnancy, &c., -	—	24	24	—	39.34	39.34
Tobacco, - - -	3	—	3	42.85	—	42.85
Confinement, - - -	3	—	3	42.85	—	37.50
Overwork, - - -	5	10	15	10.86	21.73	16.30
Syphilis, - - -	1	—	1	12.50	—	7.69
Opium, - - -	—	1	1	—	25.00	25.00
Starvation, - - -	—	1	1	—	100.00	100.00
Unknown, - - -	124	104	228	17.78	17.02	17.40
Total, - - - -	369	294	663			

TABLE XXI.

## AGES AT DEATH.

AGE.	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 15, - - - -	—	—	—	—	—	—
15 to 20, - - - -	—	—	—	4	4	8
20 to 25, - - - -	2	2	4	14	11	25
25 to 30, - - - -	2	2	4	18	17	35
30 to 35, - - - -	2	1	3	17	5	22
35 to 40, - - - -	5	1	6	48	30	78
40 to 45, - - - -	3	2	5	45	19	64
45 to 50, - - - -	2	2	4	42	27	69
50 to 60, - - - -	5	4	9	64	37	101
60 to 70, - - - -	6	2	8	64	34	98
70 to 80, - - - -	5	4	9	33	24	57
80 to 90, - - - -	2	1	3	15	12	27
Over 90, - - - -	—	—	—	1	5	6
Total, - - - -	34	21	55	365	225	590

## TABLE XXII.

## DEATHS AND THE CAUSES.

CAUSES.	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Abscess, Lung, - - -	—	—	—	1	—	1
Abscess, Tonsils, - - -	—	—	—	1	—	1
Arteritis Chronic (Atherom- atous), - - -	—	—	—	1	—	1
Arteritis, Chronic (Osseous),	—	—	—	1	—	1
Arteritis, Chronic (Aneuris- mal), - - -	—	—	—	—	1	1
Apoplexy, - - -	3	3	6	29	12	41
Bright's Disease, Acute, - -	—	—	—	1	1	2
Bright's Disease (Chronic), -	2	1	3	13	6	19
Cancer, Breast, - - -	—	—	—	—	3	3
Cancer, Stomach, - - -	—	—	—	3	—	3
Cancer, Intestines, - - -	—	—	—	1	—	1
Cancer, Uterus, - - -	—	—	—	—	1	1
Cancer, Liver, - - -	—	—	—	—	1	1
Cancer, Thyroid Gland,	—	—	—	—	1	1
Cancer, Foot, - - -	—	—	—	—	1	1
Carbuncle, - - -	—	—	—	2	—	2
Cerebral Atrophy, - - -	1	1	2	1	2	3
Cerebral Softening, - - -	1	—	1	4	—	4
Cystitis, Chronic, - - -	1	—	1	2	—	2
Drowning, Accidental, - -	1	—	1	2	—	2
Dysentery, - - -	—	—	—	2	3	5
Epilepsy, - - -	3	—	3	17	11	28
Empyema, - - -	—	—	—	1	1	2
Enteritis, - - -	—	—	—	6	6	12
Erysipelas, - - -	—	—	—	9	1	10
Fracture, Larynx, - - -	—	—	—	1	—	1
Gangrene, Lungs, - - -	—	—	—	4	2	6
General Paresis, - - -	10	1	11	62	3	65
Hemorrhage, Uterine, - - -	—	—	—	—	1	1
Heart, Hypertrophy of, - -	—	—	—	1	—	1
Heart, Paralysis of, - - -	—	—	—	2	4	6
Heart, Rupture of, - - -	—	—	—	1	—	1
Heart, Valvular Disease of, -	2	—	2	8	2	10
Heart, Fatty Degeneration of,	—	—	—	—	2	2
Hernia, Strangulated Um- bilical, - - -	—	1	1	—	1	1
Injuries from fall, - - -	—	—	—	2	—	2
Leucocythæmia, - - -	—	—	—	—	1	1
Liver, Cirrhosis of, - - -	—	—	—	1	3	4
Liver, Fatty Degeneration of,	—	—	—	—	1	1
Mania, Acute, Exhaust'n from,	—	2	2	29	16	45
Mania, Chronic, " " - -	2	—	2	22	21	43
Melancholia, " " - -	—	—	—	7	6	13
Marasmus, - - -	—	1	1	6	11	17
Meningitis, - - -	—	—	—	2	3	5
Osteoarthritis, Chronic, - -	—	—	—	1	—	1
Phthisis, Catarrhal, - - -	5	4	9	39	38	77
Phthisis, Tubercular, - - -	—	—	—	1	3	4
Phlebitis, - - -	—	—	—	—	1	1
Pleuritis, - - -	—	—	—	4	1	5
Pneumonia, - - -	1	1	2	19	7	26

TABLE XXII.—Continued.

## DEATHS AND THE CAUSES.

CAUSES.	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Peritonitis, Acute, - -	—	—	—	1	—	1
Peritonitis, Chronic, - -	—	—	—	—	1	1
Pulmonary Apoplexy, - -	—	1	1	—	1	1
Pyæmia, - - - -	—	—	—	1	—	1
Senility, - - - -	2	3	5	26	28	54
Septicæmia, - - - -	—	—	—	1	—	1
Shock from Injuries, - -	—	—	—	—	1	1
Strangulation from Food, -	—	—	—	4	—	4
Suicide, - - - -	—	1	1	10	8	18
Syphilis, - - - -	—	1	1	2	1	3
Sclerosis, Spinal, - - -	—	—	—	1	—	1
Tetanus, - - - -	—	—	—	1	—	1
Typhomania, - - - -	—	—	—	—	2	2
Undetermined, - - - -	—	—	—	6	4	10
Ulceration of Gall Bladder, -	—	—	—	1	—	1
Violence, - - - -	—	—	—	2	1	3
Total, - - - -	34	21	55	365	225	590

TABLE XXIII.

## DURATION OF DISEASE OF THOSE WHO DIED FROM THE BEGINNING.

DURATION.	From Admission into the Hospital.			From the Attack.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 1 month, -	53	31	84	9	8	17
1 to 2 months, -	30	14	44	14	8	22
2 to 3 " -	38	6	44	11	3	14
3 to 6 " -	48	22	70	19	11	30
6 to 9 " -	33	15	48	18	9	27
9 to 12 " -	25	11	36	13	10	23
12 to 18 " -	34	23	57	34	9	43
18 to 24 " -	9	13	22	28	12	40
2 to 3 years, -	28	31	59	39	25	64
3 to 5 " -	25	27	52	51	28	79
5 to 10 " -	31	21	52	46	42	88
10 to 15 " -	9	10	19	29	20	49
15 to 20 " -	2	1	3	18	11	29
20 to 25 " -	—	—	—	9	6	15
25 to 30 " -	—	—	—	4	6	10
30 to 40 " -	—	—	—	6	7	13
40 to 50 " -	—	—	—	2	5	7
Unknown, -	—	—	—	15	5	20
Average of all, - {	22.44 months.	29.46 months.	23.10 months.	5.64 years.	7.87 years.	6.46 years.



## TABLE XXIV.

REMAINING IN THE HOSPITAL AT THE END OF THE YEAR.

AGE.	Males.	Females.	Total.
Under 15, - - - - -	—	—	—
15 to 20, - - - - -	8	6	14
20 to 25, - - - - -	33	20	53
25 to 30, - - - - -	63	42	105
30 to 35, - - - - -	66	60	126
35 to 40, - - - - -	52	66	118
40 to 45, - - - - -	47	94	141
45 to 50, - - - - -	38	58	96
50 to 60, - - - - -	47	97	144
60 to 70, - - - - -	45	47	92
70 to 80, - - - - -	13	15	28
80 to 90, - - - - -	1	5	6
Over 90, - - - - -	—	—	—
Total, - - - - -	413	510	923

## TABLE XXV.

REMAINING AT THE END OF THE YEAR—DURATION OF THE DISEASE.

	Since Admission.			Since the Attack.		
	Males.	Females.	Total.	Males.	Females.	Total.
Under 1 month, - - -	19	16	35	—	—	—
1 to 2 months, - - -	10	9	19	5	2	7
2 to 3 " - - -	28	9	37	2	4	6
3 to 6 " - - -	36	18	54	5	8	13
6 to 9 " - - -	33	34	67	9	11	20
9 to 12 " - - -	20	17	37	14	5	19
12 to 18 " - - -	19	35	54	20	23	43
18 to 24 " - - -	28	30	58	12	17	29
2 to 3 years, - - -	52	52	104	33	29	62
3 to 5 " - - -	47	107	154	51	78	129
5 to 10 " - - -	76	82	158	85	118	203
10 to 15 " - - -	32	62	94	53	85	138
15 to 20 " - - -	13	39	52	30	50	80
20 to 25 " - - -	—	—	—	16	24	40
25 to 30 " - - -	—	—	—	11	17	28
30 to 40 " - - -	—	—	—	14	16	30
Over 40 " - - -	—	—	—	2	6	8
Unknown, - - -	—	—	—	51	17	68
Total, - - - - -	413	510	923	413	510	923

*TABLE XXVI.*  
PROSPECT.

	Males.	Females.	Total.
<i>Of cases admitted during the year, - -</i>			
Favorable, - - - - -	34	33	67
Unfavorable, - - - - -	87	89	176
<i>Of cases remaining at the end of the year,</i>			
Favorable, - - - - -	18	24	42
Unfavorable, - - - - -	395	476	871

*TABLE XXVII.*  
ADMISSIONS FROM CAUSES.

CAUSES.	Within the Year.			From the Beginning.		
	Males.	Females.	Total.	Males.	Females.	Total.
Anxiety of mind, business, and otherwise, - - -	2	1	3	94	50	144
Apoplexy, - - - - -	—	—	—	15	2	17
Cerebro-Spinal Meningitis, -	—	2	2	—	4	4
Confinement, - - - - -	—	—	—	8	—	8
Congenital Defect, - - - -	1	—	1	4	2	6
Connected with the affections,	6	11	17	51	97	148
Domestic difficulties, - - -	—	9	9	11	45	56
Dissipation, - - - - -	—	—	—	4	5	9
Epilepsy, - - - - -	5	4	9	89	45	134
Excessive Venery, - - - -	1	—	1	17	—	17
Fluctuations of fortune, - -	2	—	2	24	13	37
Fevers, - - - - -	1	1	2	9	10	19
Hysteria, - - - - -	—	2	2	—	5	5
Ill Health, - - - - -	3	6	9	144	231	375
Injuries to Head and Spine,	6	—	6	32	7	39
Intemperance, - - - - -	16	1	17	261	40	301
Masturbation, - - - - -	6	3	9	103	18	121
Menopausis, - - - - -	—	4	4	—	23	23
Menstruation, Disorders of,	—	4	4	—	6	6
Meningitis, Acute, - - - -	—	—	—	—	2	2
Nervous Shock, - - - - -	—	—	—	6	6	12
Nostalgia, - - - - -	—	—	—	3	4	7
Not Insane, - - - - -	1	—	1	32	7	39
Old Age, - - - - -	1	2	3	19	28	47
Over Study, - - - - -	1	2	3	8	14	22
Opium Habit, - - - - -	—	—	—	—	4	4
Over Work, - - - - -	1	9	10	46	46	92
Partial Insolation, - - - -	—	1	1	14	2	16
Puerperal State, Pregnancy, &c	—	4	4	—	61	61
Religion, - - - - -	1	3	4	31	41	72
Syphilis, - - - - -	—	2	2	8	5	13
Tobacco, - - - - -	—	—	—	7	—	7
Tuberculosis, - - - - -	—	—	—	1	—	1
Uterine Disease, - - - - -	—	2	2	—	20	20
Starvation, - - - - -	—	1	1	—	1	1
Unknown, - - - - -	67	48	115	699	611	1310
Total, - - - - -	121	122	243	1740	1455	3195

TABLE XXVIII.—Operations of the Hospital from the Beginning in Each Year.

PATIENTS.		Year ending March 31, 1869.	Year ending March 31, 1870.	Year ending March 31, 1871.	Year ending March 31, 1872.	Year ending March 31, 1873.	Year ending March 31, 1874.	Year ending March 31, 1875.	Year ending March 31, 1876.	Year ending Nov. 30, 1877.	Year ending Nov. 30, 1878.	Year ending Nov. 30, 1879.	Year ending Nov. 30, 1880.	Year ending Nov. 30, 1881.	Year ending Nov. 30, 1882.	Year ending Nov. 30, 1883.	Year ending Nov. 30, 1884.	Total.
Admitted—Males, Females, - - -	-	165	78	49	56	43	93	122	108	59	101	75	73	193	177	135	121	1740
	-	103	56	26	36	31	160	88	58	29	60	88	71	159	171	136	122	1455
Total, - - -	-	268	134	75	92	74	253	210	166	88	161	163	144	352	348	271	243	3195
Discharged, Recovered—Males, Females, - - -	-	25	27	14	11	8	16	24	33	12	20	18	11	33	39	26	26	369
	-	—	16	6	6	3	21	17	12	6	15	27	19	20	42	46	26	294
Total, - - -	-	25	43	20	17	11	37	41	45	18	32	45	30	53	81	72	52	663
Improved—Males, Females, - - -	-	11	8	14	7	8	9	19	23	21	26	20	15	16	17	17	12	267
	-	—	10	5	4	5	20	25	23	11	20	13	14	4	17	25	13	223
Total, - - -	-	11	18	19	11	13	29	44	46	32	44	33	29	20	34	42	25	490
Stationary—Males, Females, - - -	-	6	17	8	14	11	13	14	18	12	21	23	26	28	31	35	28	326
	-	—	10	6	10	9	15	20	14	5	15	14	11	5	12	24	20	203
Total, - - -	-	6	27	14	24	20	28	34	32	17	36	37	37	33	43	59	48	529
Died—Males, Females, - - -	-	14	18	11	9	12	18	21	26	9	27	9	16	32	47	43	34	365
	-	1	3	10	6	9	17	15	7	6	12	10	14	12	32	37	21	225
Total, - - -	-	15	21	21	15	21	35	36	33	15	31	19	30	44	79	80	55	590
Whole No. in the Year, - - -	-	268	343	307	329	336	524	605	616	548	629	644	654	880	1079	1113	1103	
No. at the end of the Year, - - -	-	209	232	237	262	271	395	450	460	468	481	510	528	731	842	860	923	

## TABLE XXIX.

## ADMISSIONS AND DISCHARGES—RATIO PER CENT.

	Within the Year.	From the Beginning.
<i>Admissions from causes:</i>		
Anxiety of mind and over study, - - -	2.46	5.19
Apoplexy, - - - - -	—	.53
Connected with the affections, - - - -	6.99	4.62
Connected with fluctuations of fortune, - -	.82	1.15
Connected with religion, - - - - -	1.64	2.22
Epilepsy, - - - - -	3.70	4.19
Ill Health, - - - - -	3.70	11.73
Intemperance, - - - - -	6.99	9.42
Masturbation, - - - - -	3.70	3.78
Old Age, - - - - -	1.23	1.47
Puerperal, - - - - -	1.68	1.90
Unknown, - - - - -	46.91	41.00
<i>Recovered of all cases admitted:</i>		
Under one year, - - - - -	48.93	40.22
One year and over, - - - - -	4.03	5.07
Deaths of all under care, - - - - -	4.98	18.46
Deaths of average number in Hospital, - -	6.60	7.55



# Treasurer's Report.

---

The following statement of the fiscal concerns of "The Connecticut Hospital for the Insane," for the term commencing December 1st, 1883, and ending December 1st, 1884, is respectfully submitted to the Board of Trustees:

## RECEIPTS.

Balance in hands of Treasurer, Dec. 1st, 1883, -	-	-	\$4,263 96
Revenue account from the Hospital, -	-	-	185,705 32
			\$189,969 28

## PAYMENTS.

Amount of Superintendent's orders, -	-	-	\$185,005 78
Balance in hands of Treasurer, Nov. 30th, 1884, -	-	-	4,963 50
			\$189,969 28

All of which is respectfully submitted.

M. B. COPELAND,  
*Treasurer.*

---

We hereby certify that we have examined the accounts of M. B. Copeland, Treasurer of the Connecticut Hospital for the Insane, from the first day of December, 1883, to the first day of December, 1884, compared the vouchers with the above statement, and find the same correct.

THOMAS I. RAYMOND, } *Auditors of*  
WILLIAM H. LAW, } *Public Accounts.*

MIDDLETOWN, CONN., Jan. 9, 1885.

# Superintendent's Financial Report

## DEBTOR.

Dec. 1, 1883.—Cash on hand,	-	-	-	\$86 76
" " " Balance with Treasurer,	-	-	-	4,212 96
Nov. 30, 1884.—Revenue for year,	-	-	-	185,705 32
				<u>\$190,005 04</u>

## CREDIT.

Dec. 31, 1884.—By vouchers,	-	-	-	\$20,367 30
Jan. 31, " " "	-	-	-	18,530 36
Feb. 28, " " "	-	-	-	15,055 28
Mar. 31, " " "	-	-	-	15,433 64
April 30, " " "	-	-	-	13,089 05
May 31, " " "	-	-	-	10,554 20
June 30, " " "	-	-	-	12,777 18
July 31, " " "	-	-	-	13,871 76
Aug. 31, " " "	-	-	-	19,066 42
Sept. 30, " " "	-	-	-	20,210 15
Oct. 31, " " "	-	-	-	12,709 91
Nov. 30, " " "	-	-	-	13,191 45
				<u>\$184,856 70</u>
" " Balance with Treasurer,	-	-	-	4,921 85
" " Cash on hand,	-	-	-	226 49
				<u>\$190,005 04</u>
Outstanding orders on Treasurer, No. 11,037,	-	-	-	\$29 15
" " " " No. 11,049,	-	-	-	12 50
				<u>\$41 65</u>

We hereby certify that we have examined the vouchers and accounts of the Hospital, of which the foregoing is an abstract, and find the same correct.

H. SIDNEY HAYDEN,  
J. W. ALSOP.

January 3rd, 1885.

We hereby certify that we have examined the accounts of the Superintendent of the Connecticut Hospital for the Insane, for the year ending November 30, 1884, compared the vouchers with the above statement, and find the same correct.

THOMAS I. RAYMOND, } *Auditors of*  
WILLIAM H. LAW, } *Public Accounts.*

MIDDLETOWN, CONN., Jan. 9, 1885.

# Abstract of Vouchers for the Year Ending November 30th, 1884.

MONTH.	Salaries of Officers.	Pay of Employees.	Furniture and Fixtures.	Fuel and Lights.	Dry Goods and Clothing.	Stationary and Postage.	Provisions.	Fish.	Flour.	Meat.
Dec., 1883,	\$900.82	\$3,540.66	\$160.48	\$836.53	\$1,386.20	\$174.08	\$1,288.63	\$555.78	\$549.79	\$1,094.78
Jan., 1884,	901.00	3,904.06	161.98	61.20	894.80	257.33	1,438.29	552.72	719.77	1,627.69
Feb.	900.82	4,334.02	574.59	—	538.14	45.75	1,202.16	439.77	812.80	1,690.67
March,	973.02	3,408.17	238.11	1,424.93	642.34	318.13	1,057.85	418.61	444.30	1,229.18
April,	984.15	3,152.29	329.35	—	849.34	114.72	1,385.92	591.37	686.45	1,802.12
May,	998.48	2,935.74	225.48	—	233.51	96.57	1,426.99	377.69	528.80	1,309.12
June,	962.48	2,942.59	237.22	712.12	677.87	164.17	1,522.40	442.87	707.40	1,074.74
July,	1,012.49	3,008.78	789.40	205.26	416.78	96.97	1,902.52	238.67	1,428.70	1,312.72
Aug.	1,042.49	3,131.51	925.21	7,450.84	758.59	10.00	1,523.25	246.62	405.80	1,143.31
Sept.	1,042.49	3,148.68	389.49	6,931.96	241.06	262.47	1,437.74	268.35	1,108.60	1,361.84
Oct.	1,042.49	3,113.45	556.47	58.06	730.86	128.29	1,955.30	514.96	294.00	1,477.73
Nov.	1,042.49	3,087.39	1,026.65	57.24	1,561.59	12.00	1,177.37	423.66	539.50	1,749.35
Total,	- 11,803.22	39,707.34	5,614.43	17,738.14	8,931.08	1,680.48	17,318.42	5,071.07	8,225.91	16,873.25

# Abstract of Vouchers for the Year Ending November 30th, 1884.—Continued.

MONTH.	Groceries.	Farm and Garden.	Construction.	Drugs.	Burial.	Refunded.	Repairing.	Insurance.	Miscellaneous.	Interest.	Total.
Dec., 1883,	\$898.50	\$689.53	\$6,517.72	\$136.01	\$8.25	\$52.04	\$1,205.47	\$200.00	\$172.03	—	\$20,367.30
Jan., 1884,	1,175.11	786.62	4,933.70	44.90	15.00	13.24	821.55	31.50	166.98	\$22.92	18,530.36
Feb., "	578.92	700.76	2,182.37	216.74	10.25	77.02	487.53	100.00	162.97	—	15,055.28
March, "	1,107.75	950.70	2,435.56	206.92	—	64.21	377.03	—	121.83	15.00	15,433.64
April, "	467.17	833.41	629.24	179.77	49.90	39.88	696.66	100.00	197.31	—	13,089.05
May, "	643.04	413.61	596.62	146.77	35.25	35.60	486.77	—	64.16	—	10,554.20
June, "	835.86	1,139.01	—	83.53	20.50	59.01	973.05	120.00	102.36	—	12,777.18
July, "	1,136.45	990.67	258.12	136.38	10.25	—	781.60	—	146.00	—	13,871.76
Aug. "	685.69	561.97	373.82	99.37	10.25	27.99	552.70	—	117.01	—	19,066.42
Sept. "	721.27	779.94	1,150.22	119.82	10.25	24.38	1,127.74	—	83.85	—	20,210.15
Oct. "	745.41	429.63	57.80	100.74	84.50	27.70	1,269.10	6.57	116.85	—	12,709.91
Nov. "	844.17	444.84	16.00	108.59	—	60.49	902.91	13.00	124.21	—	13,191.45
Total, -	9,839.34	8,720.69	19,151.17	1,579.54	254.40	481.56	9,682.11	571.07	1,575.56	37.92	184,856.70



# APPENDIX.

---

## ADMISSION OF PATIENTS.

1. Whenever a patient is sent to the Hospital by order of the Probate Court, the order or warrant, or a copy thereof, by which the person is sent, shall be lodged with the Superintendent.

2. Each patient, before admission, shall be made perfectly clean, and be free from vermin, or any contagious or infectious disease.

3. Each male patient shall be provided with at least two shirts, one woolen coat, one woolen vest, one pair woolen pantaloons, two pair new socks, one pair new shoes or boots, and one comfortable outside garment.

Each female patient shall, in addition to a quantity of under-clothing, shoes and stockings corresponding to that required for the male patient, have one flannel petticoat, two good dresses, one cloak or other good outside garment. Extra and better apparel is very desirable for Chapel worship and out-of-door's exercise and riding.

4. In all cases the patient's best clothing should be sent; it will be carefully preserved, and only used when deemed necessary for the purpose above mentioned. Jewelry, and all superfluous articles of dress, knives, etc., should be left at home, as they are liable to be lost, and for them the officers of the Hospital are not responsible.

5. A written history of the case should be sent with the patient, and, if possible, some one acquainted with the individual should accompany him to the Hospital, from whom minute, but often essential, particulars may be learned.

6. The price of board, including washing, mending and attendance, for all who are supported at the public charge, is \$3.75 per week.

7. Pauper patients, or those supported partly by the towns in which they reside, and partly by the State, are admitted agreeably to Section 1, Chap. 103, Public Acts, 1878.

8. Indigent persons, or those possessing little property, and partly supported by friends and partly by the State, are admitted under Section 1, Chap. 103, Public Acts, 1878.

9. Private patients, or those supported by themselves or their friends, are admitted to the Hospital under Section 2, Chap. 103, Public Acts, 1878.

10. Visitors are admitted to the Institution between the hours of ten A. M. and twelve M., and between two and four P. M., on Mondays, Wednesdays and Fridays only, but no visitors shall be admitted to the Wards occupied by patients without express permission from the Superintendent, and especial care is to be taken that no amount of visiting is permitted that might prove injurious to the patients.

## An Act concerning the Connecticut Hospital for the Insane.

PUBLIC ACTS, 1878, CHAPTER 103, AS AMENDED BY PUBLIC ACTS,  
1879, CHAPTER 71.

SECTION 1. When any pauper in any town may be insane, a Selectman of such town shall apply to the judge of probate of the district wherein said pauper resides, for his admission to said hospital; and said judge shall appoint a respectable physician, who shall fully investigate the facts of the case, and report to said judge; and, if such physician shall be satisfied that said *pauper* is insane, the judge shall order such selectman forthwith to take such insane pauper to the hospital, where he shall be kept and supported so long as may be requisite, and *two dollars and fifty cents* of the expense of his support shall be paid by the town legally chargeable with his support, and the balance by the State; and when an *indigent* person, *not a pauper*, is insane, application may be made in his behalf to the judge of probate for the district where he resides, who shall appoint a respectable physician and a selectman of the town where said indigent person resides, who shall fully investigate the facts and report to said judge, who, if satisfied that such person is indigent and insane, shall order him to be taken, by the person making the application, to the hospital, *where he shall be kept and supported as long as may be requisite; and half of the expense of his support shall be paid by the State, and half by the person making the application;* and when a judge shall issue an order for the admission of any pauper or indigent person to the hospital, he shall record it, and immediately transmit a duplicate to the Governor.

SEC. 2. The trustees may authorize the Superintendent to admit patients into the hospital, under special agreements, when there are vacancies.

SEC. 3. The price for keeping any pauper or indigent person shall be fixed by the trustees, and shall not exceed the sum of four dollars per week, and shall be payable quarterly.

SEC. 4. There shall be taxed monthly by the comptroller one dollar and fifty cents for each week's board at said hospital, and two dollars for each week's board at any other hospital or asylum for the insane, of all insane paupers belonging to towns in this State committed in pursuance of the first section of this act, and two dollars for each week's board at said hospital, and one-half of the expense of each week's board at any other hospital or asylum for the insane, of all insane indigent persons committed in pursuance of first section of this act, and the superintendents of each of said institutions shall make the bill therefor and present it to the Governor, upon whose approval it shall be paid from the State treasury.

SEC. 5. Sections 6, 7, 8, 9 and 10 of chapter 4, title 8 of the General Statutes, and an act passed January session, A. D. 1877, entitled An act reducing the price to be paid by the State for the support of indigent and insane persons, be, and the same are hereby repealed.

SEC. 6. This act shall take effect from its passage.

Approved March 29, 1878.

Amendment approved March 28, 1879.



# Statement of Vote,

NOVEMBER ELECTION,

1884.

Tabulated from Returns in the Office of the  
Secretary of State.

---

HARTFORD:

PRESS OF WILEY, WATERMAN & EATON.

1885.





HARTFORD COUNTY.	Whole Number of Names on Registry List.	Whole Number Checked as having Voted.	Whole Number Checked, not	Number of Ballots found in each box, viz.:		Number of Ballots in the wrong box, viz.:		Number of Ballots not counted for being double, viz.:		Number of Ballots Rejected for other causes.	
				General.	Representative.	General.	Representative.	General.	Representative.	General.	Representative.
Hartford,.....	10,824	10,076	748	10,069	10,029	4	...	11	8	...	...
Avon, .....	268	244	24	244	237	...	...	...	...	...	...
Berlin, .....	614	558	56	558	553	...	1	...	...	†	...
Bloomfield,.....	379	352	27	352	350	...	...	...	...	...	...
Bristol,.....	1,483	1,381	106	1,380	1,268	1	...	2	...	...	...
Burlington,.....	270	247	23	247	242	...	...	...	...	...	...
Canton, .....	589	559	30	558	554	...	...	...	...	...	...
East Granby,.....	201	193	8	191	190	...	...	...	...	...	...
East Hartford,.....	911	854	57	852	853	...	...	3	1	†	...
East Windsor,.....	634	591	43	591	584	1	1	...	...	...	...
Enfield, .....	1,321	1,248	73	1,234	1,222	2	...	2	...	...	...
Farmington,.....	738	686	52	686	687	...	...	...	...	...	...
Glastonbury,.....	875	838	37	839	831	...	...	...	1	...	...
Granby, .....	389	357	32	357	355	...	...	...	...	...	...
Hartland, .....	203	192	11	192	190	...	...	...	...	...	...
Manchester,.....	1,354	1,170	184	1,170	1,168	...	1	...	...	...	...
Marlborough,.....	89	77	12	77	73	...	...	...	...	...	...
New Britain,.....	3,416	3,172	215	3,168	3,151	...	...	...	...	...	...
Newington, .....	201	192	9	193	188	...	...	2	...	...	...
Plainville, .....	500	466	34	466	467	...	...	...	4	...	...
Rocky Hill, .....	261	232	29	232	227	...	...	...	...	...	...
Simsbury,.....	533	491	42	*.....	*	...	...	...	...	...	...
Southington, .....	1,460	1,321	139	*.....	1 319	4	...	1	...	†	...
South Windsor, .....	464	421	43	420	417	1	1	...	...	...	...
Suffield, .....	819	752	66	746	735	...	...	1	...	...	...
West Hartford,.....	408	373	35	373	370	...	...	...	...	...	...
Wethersfield,.....	426	398	28	398	391	1	...	...	...	...	...
Windsor, .....	730	675	55	674	670	...	...	...	...	...	...
Windsor Locks, ....	498	459	39	459	453	...	...	1	...	...	...
	30,858	28,575	2,251	26,726	27,774	17	4	23	14	2	1

\* Not returned.

† For cause, see original return.

NEW HAVEN COUNTY.	Whole Number of Names on Registry List.	Whole Number Checked as having Voted.	Whole Number not Checked.	Number of Ballots found in each box, viz.:		Number of Ballots in each box not counted as in the wrong box, viz.:		Number of Ballots not counted for being double, viz.:		Number of Ballots Rejected for other causes.	
				General.	Representative.	General.	Representative.	General.	Representative.	General.	Representative.
New Haven, .....	16,771	15,605	1,164	15,567	15,313	93	46	21	21	42	....
Beacon Falls, .....	120	112	8	112	110	2	1	....	....	42	+1
Bethany, .....	171	157	14	157	152	....	....	....	....	....	....
Branford, .....	877	764	113	762	751	....	....	....	....	....	....
Cheshire, .....	503	467	36	463	459	....	....	1	....	....	....
Derby, .....	3,072	2,900	172	2,900	2,889	....	....	....	2	+1	+1
East Haven, .....	244	222	22	*	*	1	1	1	....	....	....
Guilford, .....	727	652	75	654	668	2	....	1	1	....	....
Hamden, .....	865	692	173	688	692	....	....	....	2	....	....
Madison, .....	454	372	82	372	342	....	....	....	....	....	....
Meriden, .....	4,416	4,186	230	4,193	*	11	4	3	....	....	....
Middlebury, .....	147	138	9	138	127	....	....	....	....	....	....
Milford, .....	911	848	63	858	831	....	1	....	....	....	....
Naugatuck, .....	1,065	978	87	987	976	6	1	....	....	....	+1
North Branford, .....	250	223	27	223	216	....	....	....	....	+1	....
North Haven, .....	410	354	56	353	349	....	....	....	....	....	....
Orange, .....	810	727	83	727	719	5	2	2	1	+2	....
Oxford, .....	262	238	24	238	235	....	....	....	....	....	....
Prospect, .....	131	119	12	119	116	....	....	....	....	....	....
Seymour, .....	619	589	30	589	581	....	....	....	....	....	....
Southbury, .....	348	307	41	307	304	1	3	....	....	....	+12
Wallingford, .....	1,202	1,085	117	1,085	1,068	1	1	....	....	....	+1
Waterbury, .....	5,431	4,958	473	4,958	4,948	21	....	....	....	....	....
Wolcott, .....	132	121	11	121	119	....	....	....	....	....	....
Woodbridge, .....	192	178	14	180	173	1	....	....	....	....	....
	40,130	36,992	3,136	36,751	32,138	144	60	29	27	8	16

\* Not returned.

† For cause, see original return.

NEW LONDON COUNTY.	Whole Number of Names on Registry List.	Whole Number Checked as having Voted.	Whole Number Checked, not	Number of Ballots found in each box, viz.:		Number of Ballots in each box not counted as in the wrong box, viz.:		Number of Ballots not counted for being double, viz.:		Number of Ballots Rejected for other causes.	
				General.	Representative.	General.	Representative.	General.	Representative.	General.	Representative.
New London,.....	2,556	2,239	317	2,232	2,216	3	2	1	4	....	....
Norwich, .....	4,536	4,069	467	4,073	4,018	7	3	....	....	....	....
Bozrah, .....	174	158	16	157	154	....	....	....	....	....	....
Colchester, .....	696	614	82	617	595	2	....	4	....	....	....
East Lyme,....	423	340	83	340	334	....	....	....	....	....	....
Franklin, .....	149	138	11	*	*	....	....	....	....	....	....
Griswold, .....	537	474	63	474	468	....	....	....	....	....	....
Groton, .....	1,402	1,191	211	1,192	1,193	....	....	1	1	....	....
Lebanon, .....	463	393	70	393	376	....	....	....	....	....	....
Ledyard, .....	338	271	67	271	262	....	....	1	....	....	....
Lisbon, .....	154	146	8	143	141	....	....	....	....	....	....
Lyme, .....	270	244	26	237	239	....	....	1	....	....	....
Montville, .....	619	567	52	559	544	....	....	....	....	....	....
North Stonington,...	496	422	74	*	*	....	....	....	....	....	....
Old Lyme, .....	305	265	40	265	261	....	....	....	....	....	....
Preston, .....	675	618	57	*	*	....	3	....	....	....	....
Salem, .....	147	128	19	128	123	1	....	....	....	....	....
Sprague, .....	321	270	51	271	242	....	....	....	....	....	....
Stonington, .....	1,652	1,444	208	1,442	1,441	....	....	....	....	....	....
Voluntown, .....	240	214	26	214	214	....	....	....	....	....	....
Waterford, .....	623	508	115	487	502	....	....	....	....	....	....
	16,776	14,713	2,063	13,495	13,323	13	8	8	5	....	....

\* Not returned.



FAIRFIELD COUNTY.	Whole Number of Names on Registry List.	Whole Number Checked as having Voted.	Whole Number not Checked.	Number of Ballots found in each box, viz.:		Number of Ballots in each box not counted as in the wrong box, viz.:		Number of Ballots not counted for being double, viz.:		Number of Ballots Rejected for other causes.	
				General.	Representative.	General.	Representative.	General.	Representative.	General.	Representative.
Bridgeport, .....	7,799	7,168	631	7,178	7,105	5	1	12	....	....	....
Fairfield, .....	958	825	133	828	825	....	....	4	2	....	1
Belhel, .....	743	697	46	697	695	....	....	....	....	....	1
Brookfield, .....	274	259	15	259	257	....	....	....	....	....	....
Danbury, .....	3,294	2,971	323	2,980	2,973	5	1	1	6	....	....
Darien, .....	460	426	34	426	424	3	3	....	1	....	1
Easton, .....	299	*	*	260	249	....	....	....	....	....	....
Greenwich, .....	1,886	1,633	253	1,642	1,619	8	....	....	5	....	1
Huntington, .....	725	686	39	686	685	....	....	1	....	....	1
Monroe, .....	303	274	29	274	261	....	....	....	1	....	....
New Canaan, .....	639	592	47	592	591	....	....	....	2	....	....
New Fairfield, .....	193	187	6	187	186	....	....	....	....	....	....
Newtown, .....	905	800	105	800	796	2	1	....	....	....	....
Norwalk, .....	3,439	3,109	330	3,109	3,089	13	14	1	3	....	....
Redding, .....	352	328	24	327	327	....	....	....	....	....	5
Ridgefield, .....	553	513	40	512	503	2	....	....	....	....	....
Sherman, .....	206	196	10	196	193	....	....	....	....	....	1
Stamford, .....	2,759	2,429	330	2,446	2,398	26	9	10	2	....	....
Stratford, .....	1,099	1,018	81	1,010	992	1	1	....	....	....	....
Trumbull, .....	365	346	19	347	344	1	....	....	....	....	....
Weston, .....	231	208	23	208	204	....	....	....	....	....	....
Westport, .....	905	729	176	729	716	....	4	2	1	....	....
Wilton, .....	460	414	46	414	408	2	1	....	....	1	....
	28,847	25,808	2,740	26,107	25,840	68	35	31	23	1	11

\* Not returned.

WINDHAM COUNTY.	Whole Number of Names on Registry List.	Whole Number Checked as having Voted.	Whole Number not Checked.	Number of Ballots found in each box, viz.:		Number of Ballots in each box not counted as in the wrong box, viz.:		Number of Ballots not counted for being double, viz.:		Number of Ballots Rejected for other causes.	
				General.	Representative.	General.	Representative.	General.	Representative.	General.	Representative.
Brooklyn,.....	389	348	41	349	336	4	1	....	....	....	....
Ashford,.....	324	282	42	287	282	....	....	....	....	....	....
Canterbury,.....	329	312	17	312	312	....	....	....	....	....	....
Chaplin,.....	148	125	23	125	120	....	....	....	....	....	3
Eastford,.....	208	197	11	197	188	....	....	....	....	....	....
Hampton,.....	187	166	21	167	156	....	....	2	....	....	....
Killingly,.....	1,292	1,118	184	1,117	1,079	2	....	....	....	1	1
Plainfield,.....	753	693	60	690	680	....	....	....	1	....	....
Pomfret,.....	313	267	46	269	193	....	....	1	....	....	8
Putnam,.....	931	811	120	808	815	....	....	1	....	....	....
Scotland,.....	160	142	17	142	140	....	....	....	....	....	....
Sterling,.....	239	211	28	211	210	....	....	....	....	....	....
Thompson,.....	603	502	101	508	493	5	....	....	....	....	....
Windham,.....	1,834	1,437	397	1,438	1,431	2	1	....	....	....	....
Woodstock,.....	617	545	72	546	537	....	4	....	....	....	....
	8,327	7,156	1,180	7,166	6,972	13	6	4	1	1	12

LITCHFIELD COUNTY.	Whole Number of Names on Registry List.	Whole Number Checked as having Voted.	Whole Number Checked not Checked.	Number of Ballots found in each box, viz.:		Number of Ballots in each box not counted as in the wrong box, viz.:		Number of Ballots not counted for being double, viz.:		Number of Ballots Rejected for other causes.	
				General.	Representative.	General.	Representative.	General.	Representative.	General.	Representative.
Litchfield, .....	811	727	84	724	717	....	....	....	....	....	1
Barkhamsted, .....	334	316	18	334	334	....	....	....	....	....	....
Bethlehem, .....	184	173	11	173	171	....	....	....	....	....	5
Bridgewater, .....	183	165	18	165	153	....	....	....	2	....	....
Canaan, .....	309	284	25	*	*	....	....	....	....	....	....
Colebrook, .....	245	226	19	....	224	....	....	....	....	....	1
Cornwall, .....	394	359	35	359	358	....	....	....	....	....	1
Goshen, .....	230	217	13	212	212	....	....	....	....	....	....
Harwinton, .....	258	227	31	*	*	....	....	....	....	....	....
Kent, .....	380	348	32	348	341	....	....	....	2	....	....
Morris, .....	175	157	18	157	150	....	....	....	....	....	....
New Hartford, .....	608	571	36	575	564	....	....	....	....	....	....
New Milford, .....	1,074	984	90	986	974	....	1	1	1	....	....
North Canaan, .....	379	345	34	345	339	....	....	....	....	....	....
Norfolk, .....	334	314	26	314	312	....	....	....	....	....	....
Plymouth, .....	523	491	32	486	486	....	....	....	....	....	....
Roxbury, .....	256	244	12	244	241	....	....	....	....	....	1
Salisbury, .....	846	794	52	797	788	2	....	....	1	....	....
Sharon, .....	683	559	124	559	556	....	....	2	....	....	....
Thomaston, .....	782	701	81	701	661	....	....	1	....	....	1
Torrington, .....	990	931	59	931	925	2	....	1	2	....	....
Warren, .....	153	137	15	137	134	....	....	....	....	....	....
Washington, .....	431	404	31	401	400	4	....	....	....	....	....
Watertown, .....	*	*	*	445	433	4	....	....	....	....	....
Winchester, .....	1,420	1,304	116	1,301	1,300	1	....	1	1	....	....
Woodbury, .....	524	487	35	487	487	1	2	....	....	....	....
	12,506	11,465	1,041	11,409	11,260	15	5	6	10	....	10

\* Not returned.

MIDDLESEX COUNTY.	Whole Number of Names on Registry List.	Whole Number Checked as having Voted.	Whole Number not Checked.	Number of Ballots found in each box, viz.:		Number of Ballots in each box not counted as in the wrong box, viz.:		Number of Ballots not counted for being double, viz.:		Number of Ballots Rejected for other causes.	
				General.	Representative.	General.	Representative.	General.	Representative.	General.	Representative.
Middletown,.....	2,741	2,495	246	2,499	2,468	1	1	3	1	....	....
Haddam,.....	570	537	33	537	535	....	....	....	1	....	....
Chatham,.....	481	452	29	452	452	....	....	....	....	....	....
Chester,.....	327	291	36	292	278	....	....	1	....	....	*2
Clinton,.....	403	357	36	356	340	1	....	....	1	....	....
Cromwell,.....	413	372	41	372	367	....	....	2	....	....	....
Durham,.....	236	221	15	217	220	....	1	....	....	*1	*1
East Haddam,.....	720	649	71	649	647	1	1	2	....	....	*1
Essex,.....	592	550	42	549	538	....	....	1	....	....	....
Killingworth,.....	210	178	32	178	178	....	....	....	....	....	....
Middlefield,.....	213	202	11	202	200	....	....	....	....	....	*1
Old Saybrook,.....	309	272	37	271	271	1	2	1	....	....	....
Portland,.....	802	656	146	656	652	....	....	....	....	....	....
Saybrook,.....	352	329	23	329	324	..	1	1	....	*1	....
Westbrook,.....	253	224	29	224	211	....	....	....	....	....	....
	8,622	7,785	827	7,783	7,681	4	6	11	3	2	5

\* For cause, see original return.

TOLLAND COUNTY.	Whole Number of Names on Registry List.	Whole Number Checked as having Voted.	Whole Number not Checked.	Number of Ballots found in each box, viz.:		Number of Ballots in each box not counted as in the wrong box, viz.:		Number of Ballots not counted for being double, viz.:		Number of Ballots Rejected for other causes.	
				General.	Representative.	General.	Representative.	General.	Representative.	General.	Representative.
Tolland, .....	290	267	23	267	260	....	....	....	....	....	....
Andover, .....	130	124	6	124	122	....	....	....	....	....	....
Bolton, ..	147	129	18	129	126	....	....	....	....	....	....
Columbia, .....	193	183	10	183	180	....	....	....	....	....	+1
Coventry, ..	487	439	48	439	436	....	....	....	....	....	....
Ellington, .....	358	320	38	315	*	....	....	2	....	....	....
Hebron, .....	294	275	19	276	279	....	....	....	....	....	....
Mansfield, .....	539	458	81	455	451	....	....	....	....	....	....
Somers, .....	333	310	23	310	309	....	....	....	....	....	....
Stafford, .....	967	864	103	862	853	....	1	....	2	....	....
Union, .....	128	113	15	113	101	....	....	....	....	....	....
Vernon, .....	1,525	1,419	106	1,421	1,413	14	13	....	....	....	+1
Willington, .....	248	232	16	216	204	....	....	....	....	....	....
	5,639	5,133	506	5,110	4,734	14	14	2	2		2

\* Not returned.

† For cause, see original return.

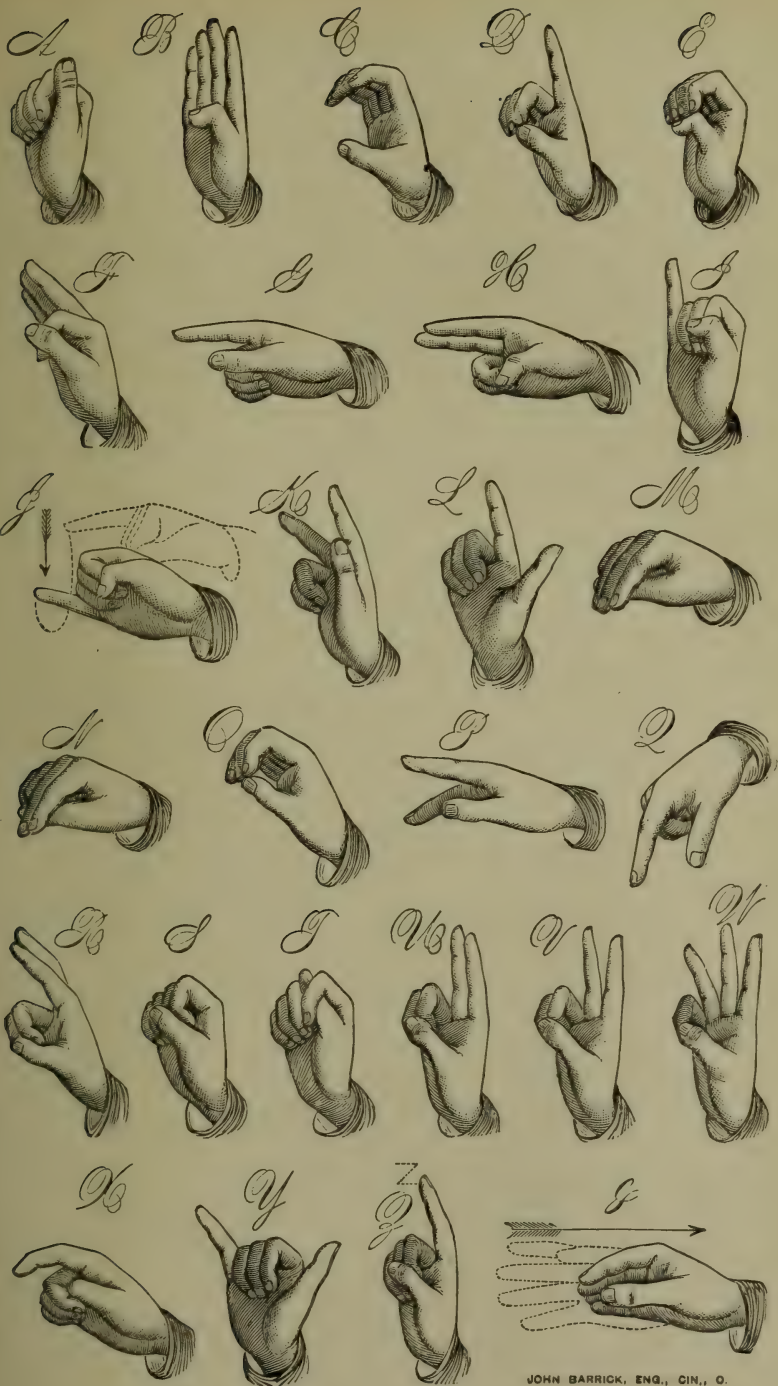


SUMMARY OF COUNTIES.	Whole Number of Names on Registry List.	Whole Number Checked as having Voted.	Whole Number not Checked.	Number of Ballots found in each box, viz.:		Number of Ballots in each box not counted as in the wrong box, viz.:		Number of Ballots not counted for being double, viz.:		Number of Ballots Rejected for other causes.	
				General.	Representative.	General.	Representative.	General.	Representative.	General.	Representative.
Hartford, .....	30,858	28,575	2,251	*26,726	*27,774	17	4	23	14	†2	†1
New Haven, .....	40,130	36,992	3,136	*36,751	*32,138	144	60	29	27	†8	†16
New London, .....	16,776	14,713	2,063	*13,495	*13,323	13	8	8	5	....	....
Fairfield, .....	28,847	*25,808	*2,740	26,107	25,840	68	35	31	23	†1	†11
Windham, .....	8,327	7,156	1,180	7,166	6,972	13	6	4	1	†1	†12
Litchfield, .....	*12,506	*11,465	*1,041	*11,409	*11,260	15	5	6	10	....	†10
Middlesex, .....	8,622	7,785	827	7,783	7,681	4	6	11	3	†2	†5
Tolland, .....	5,639	5,133	506	5,110	*4,734	14	14	2	2	....	†2
	151,705	137,627	13,744	134,547	129,722	288	138	114	85	14	57

\* Returns not complete.

† For cause, see original return.

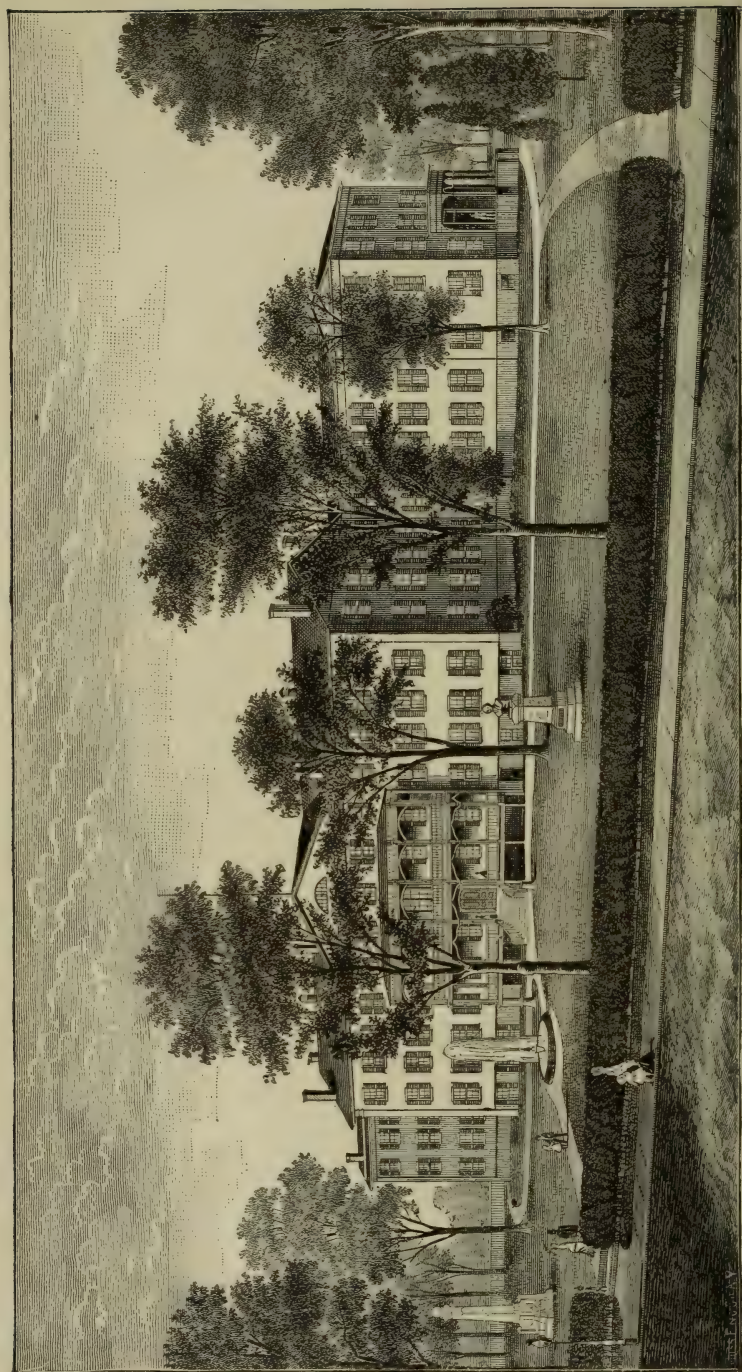












AMERICAN ASYLUM.

THE  
SIXTY-NINTH ANNUAL REPORT  
OF THE  
DIRECTORS AND OFFICERS  
OF THE  
AMERICAN ASYLUM,  
AT HARTFORD,  
FOR THE  
EDUCATION AND INSTRUCTION  
OF THE  
DEAF AND DUMB.

---

*Presented to the Asylum, May 9, 1885.*

---

HARTFORD, CONN.:  
PRESS OF THE CASE, LOCKWOOD & BRAINARD COMPANY  
1885.



# BOARD OF DIRECTORS.

---

## PRESIDENT.

HON. FRANCIS B. COOLEY,

## VICE-PRESIDENTS.

ROLAND MATHER,  
NATHANIEL SHIPMAN.  
GEO. M. BARTHOLOMEW,  
JOHN C. PARSONS,

PINCKNEY W. ELLSWORTH,  
JONATHAN B. BUNCE,  
ROLAND SWIFT,  
JOHN C. DAY.

## DIRECTORS.

(By Election.)

WILLIAM M. HUDSON,  
FRANK W. CHENEY,  
GEORGE M. WELCH,  
SAMUEL N. KELLOGG,  
WILLIAM J. WOOD,

DANIEL R. HOWE,  
LUCIUS A. BARBOUR,  
ATWOOD COLLINS,  
WILLIAM L. MATSON,  
STEPHEN A. HUBBARD.

## *Ex Officio.*

HIS EXCELLENCY, FREDERICK ROBIE, Governor of Maine.

HON. ORAMANDAL SMITH, Secretary of State.

HIS EXCELLENCY, SAMUEL W. HALE, Governor of New Hampshire.

HON. A. B. THOMPSON, Secretary of State.

HIS EXCELLENCY, SAMUEL E. PINGREE, Governor of Vermont.

HON. CHARLES W. PORTER, Secretary of State.

HIS EXCELLENCY, GEORGE D. ROBINSON, Governor of Massachusetts.

HON. HENRY B. PIERCE, Secretary of State.

HIS EXCELLENCY, GEO. P. WETMORE, Governor of Rhode Island.

HON. JOSHUA M. ADDEMAN, Secretary of State.

HIS EXCELLENCY, HENRY B. HARRISON, Governor of Connecticut.

HON. CHARLES A. RUSSELL, Secretary of State.

## SECRETARY.

ATWOOD COLLINS.

## TREASURER.

ROLAND MATHER.

## DIRECTING COMMITTEE.

GEORGE M. WELCH, CHAIRMAN,

JOHN C. PARSONS.

JONATHAN B. BUNCE.





# OFFICERS AND TEACHERS.

---

## PRINCIPAL.

JOB WILLIAMS, M.A.

## INSTRUCTORS.

GILBERT O. FAY, PH.D.,	MARY A. MANN,
ABEL S. CLARK, M.A.,	CAROLINE C. SWEET,
SIMEON T. WALKER,	KATE C. CAMP,
GEORGE F. STONE,	IDA V. HAMMOND,
WILLIAM H. WEEKS,	JANE B. KELLOGG,
JOHN E. CRANE, B.A.,	LUCY S. WILLIAMS,
NELLIE W. STONE.	

## TEACHERS OF ARTICULATION.

ADA R. KING.

---

## TEACHER OF DRAWING.

SOLON P. DAVIS.

## ATTENDING PHYSICIAN.

GEORGE W. AVERY, M.D.

## STEWARD.

WM. P. WILLIAMS.

## ASSISTANT STEWARD.

WILLIAM M. BENSON.

## BOYS' SUPERVISOR.

EDWARD P. GALE.

## MATRON.

MISS MARGARET GREENLAW.

## ASSISTANT MATRONS.

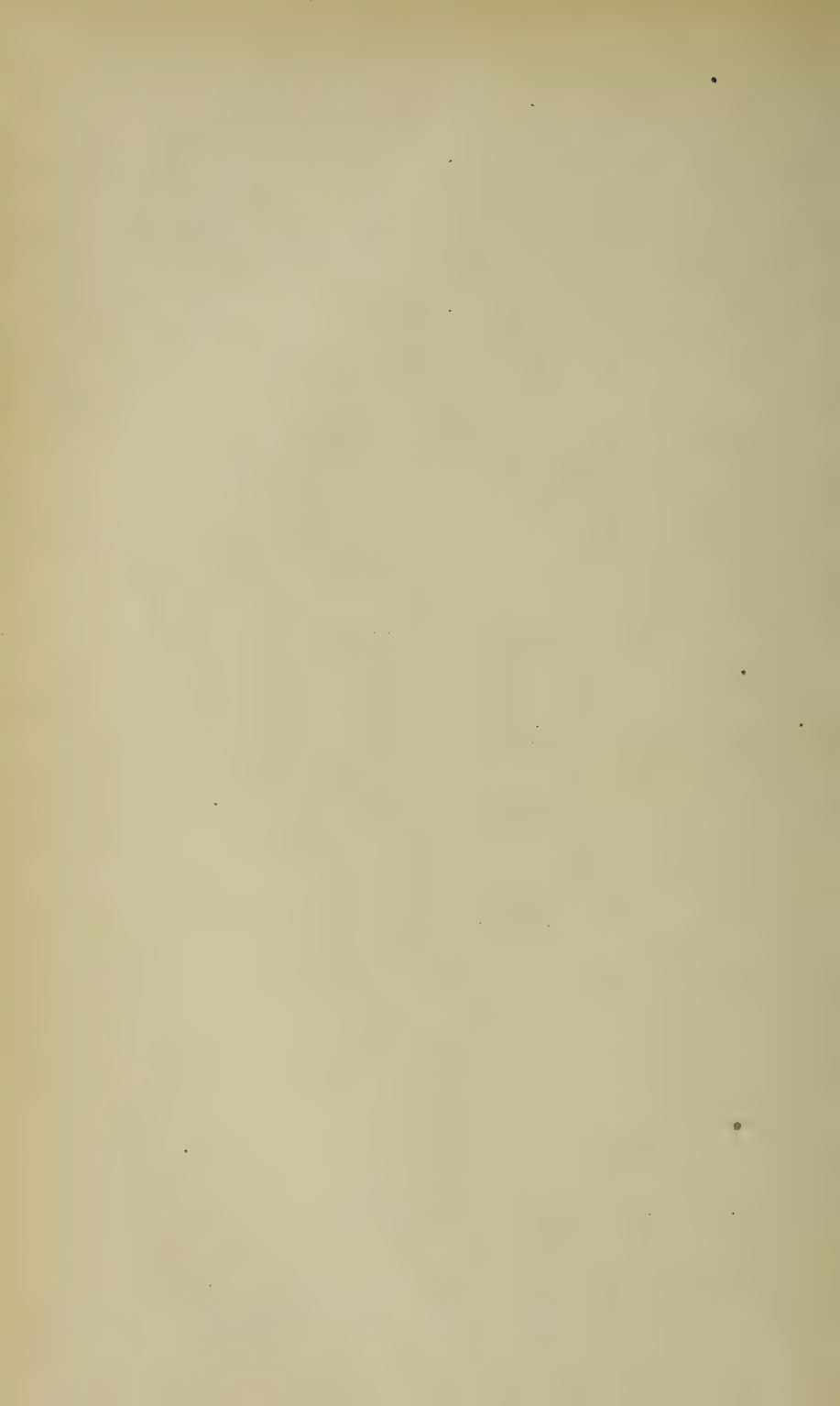
MRS. MARY A. PERRY.

MISS ELIZA GREEN.

NOAH A. SMITH, MASTER OF THE CABINET SHOP.

WILLIAM B. FLAGG, MASTER OF THE SHOE SHOP.

MISS SARAH A. BEACH, MISTRESS OF THE TAILORS' SHOP.



## DIRECTORS' REPORT.

---

In presenting the Sixty-ninth Annual Report of the Asylum, we place upon record another year of uninterrupted progress in the work of the education and instruction of the deaf and dumb.

Conscientious and painstaking labor on the part of the teachers has been attended with gratifying results in every department of the institution.

Those interested in this branch of education are always welcome visitors at the Asylum, and are cordially invited to make personal examination of the efficiency of the methods of instruction there employed.

During the past year we have been deprived, by death, of the valued services of the late Hon. Calvin Day, President of this Board and Corporation. Mr. Day was appointed a Director of the American Asylum in 1842, and President of the Corporation in 1868. Through this long period of more than forty years, Mr. Day has given generously of his time and thought to the interests of the Asylum. As President, he has brought to the administration of its affairs a sound judgment and a wise discretion which have materially aided in enhancing its prosperity. We append the resolutions of respect passed at a special meeting of the Board of Directors at the time of Mr. Day's decease.

We have also to record, in a review of the past year, the death of two gentlemen who have been for a long time identified with our institution as instructors. The Rev. John R. Keep, who died in June, 1884, had been connected with the Asylum for twenty-six years, having resigned his position in 1880. Mr. Keep was a teacher of warm sympathy for his

pupils, and of marked ability and enthusiasm in his work. His writings in this field are also an important addition to the literature of deaf-mute instruction.

Mr. R. S. Storrs, whose death occurred in August, 1884, had been a teacher in the Asylum for thirty years, from 1852, with an interval of two years, till his decease. Mr. Storrs was remarkably gifted for the teaching of deaf-mutes. He loved the work, and brought to it ability of the highest order.

We cannot estimate the value of the services rendered by these capable and earnest men to the pupils under their charge and to the cause of deaf-mute instruction.

For details of the management, reference is made to the accompanying reports.

For the Board of Directors,

ATWOOD COLLINS, *Clerk.*

At a special meeting of the Directors of the American Asylum, at Hartford, for the Education and Instruction of the Deaf and Dumb, held June 12, 1884, the following preamble and resolutions were unanimously adopted :

IN attempting to place on record some tribute to the memory of Mr. Calvin Day, late President of this Corporation, the Directors feel that they are not merely discharging a duty, but are giving expression to a sense of personal bereavement, common to all the instructors and friends of the Asylum. Mr. Day became a member of this Board in 1842, and has ever since borne no trifling share in its administration. For the last sixteen years, he has been its President. But for over forty years he has given much time and care to the details and the general direction of the Asylum: representing its interests before the authorities of our own and other States, befriending its teachers and pupils, counseling its officers, and promoting in innumerable ways its material prosperity and its highest aims. In all associations Mr. Day's vigor, integrity, keen intelligence, and sound judgment have made themselves felt, but with these qualities of his character there has been

displayed, in the management of the Asylum, an earnest and tender solicitude rarely given to any object outside one's own family and personal interests. Men of strong will and marked ability not infrequently become intolerant, but Mr. Day was never the slave of even his own opinions and prejudices. He was ready to accord to others their right of judgment, and to submit to the decision of the majority. If disappointed, he never became an obstructionist or a grumbler. He was especially kind and encouraging to young men. Frank, positive, energetic, but generous and considerate of others, his friends could confidently depend on his loyalty to them, and on his absolute sincerity, and thus coöperation with him was always a pleasure. To the roll of honored presidents of the Asylum in years long past—John Cotton Smith, Wadsworth, Terry, Williams, and Ellsworth—we now sorrowfully add the name of no unworthy companion, our honored and beloved last President, Calvin Day.

*Resolved*, That, as a mark of our respect, we will attend the funeral in a body, and that a copy of this record be transmitted to the family of Mr. Day.

*Resolved*, That the Principal, instructors, and pupils be invited also to attend the funeral of Mr. Day.

(Signed)

ATWOOD COLLINS, *Clerk*.



## REPORT OF THE PRINCIPAL.

---

*Gentlemen:*—The year just closed has been one of general prosperity in our school. Faithful and efficient work has been done by the teachers, officers, and pupils, with satisfactory results. The general health of our pupils has been excellent, for though having our fair share of slight ailings, there has been but one really serious case of acute disease (pneumonia) during the year, and in that the recovery was complete.

The attendance for the year has been as follows :

Number of pupils present May 1, 1884,	-	-	-	174
Number of admissions,	-	-	-	34
Number of re-admission,	-	-	-	1
Total attendance,	-	-	-	209
Number of dismissals,	-	-	-	31
Left on account of chronic ill health,	-	-	-	1
Number present May 1, 1885,	-	-	-	177

At the opening of the term in September the seat of Katie E. Russell of Lovell Centre, Maine, was vacant. Word was soon received that she was in excellent health, but was unavoidably detained at home for a few days. She was a general favorite in the school and all were looking forward with pleasure to the day of her return. These pleasant anticipations were suddenly turned to sorrow by the tidings that our young friend had suddenly died of heart disease, while attending a church sociable on the evening of October second. She had been a member of the school for seven years, had made good use of her privileges and had developed into a lovely Christian character.

As a very unusual occurrence with us several changes in the list of teachers and officers have taken place during the

year. Miss Abbie E. Read, who for five years had been a very successful and valued teacher in the department of articulation, resigned her position at the end of the school year, to enter upon the more congenial duties of domestic life and to preside over a home of her own. Our best wishes follow her into her new sphere of life.

We are called upon to record the loss of another teacher under very trying circumstances. Mr. R. S. Storrs, while suffering under an attack of insanity, terminated his own life on the 31st of August, 1884. For more than thirty years, Mr. Storrs had been an instructor of deaf-mutes, and, with the exception of two years in which he filled a professorship in the National Deaf-Mute College at Washington, he was a most efficient teacher in this school. His great natural endowments, his fertility in expedients, his versatility, his ingenuity, his long experience, and his wonderful facility in the use of the English language, gave him rare fitness for the difficult task of reaching and developing the minds of deaf-mutes. His ingenuity devised many valuable aids for overcoming the difficulties which lie in their path, and all were freely given to the general cause. To him, both directly and indirectly, this school owes not a little of its high standing as an educational institution. His death brought great loss to the cause of deaf-mute education.

For the vacancy in our corps of teachers caused by the death of Mr. Storrs, we were fortunate in securing the services of Mr. S. T. Walker, who had demonstrated his fitness for the work by nine years of successful teaching in similar schools—eight years in the Institution for the Deaf and Dumb at Jacksonville, Ill., and one year in the Philadelphia Institution.

The vacancy in the articulation department is supplied by a temporary arrangement.

Mr. Henry M. Fairman, who had temporarily filled the position of assistant steward, retired from that position on the first of September, and was succeeded by Mr. William M. Benson, whose faithful and efficient services for nearly a year in another responsible position with us had fairly earned him his promotion.

Two former laborers in the Asylum have been called to their rest during the past year. Rev. John R. Keep, for twenty-six years a teacher here, and through his writings and school-books one of the most widely-known men in the profession, and Mrs. Phebe C. White, who for thirty-two years, with rare fidelity and efficiency, filled the position of matron. Mrs. White retired from the service of the Asylum in 1871, at the age of seventy-three, feeling the burden of responsibility too great for her advanced years. Mr. Keep, having reached three score and ten years and feeling the infirmities of age, resigned in 1880. Mr. Keep died June 15, 1884, and Mrs. White on the 8th of November following.

The first book printed by the Asylum under "The Ellen Lyman Fund" and illustrated by "The Joseph Davis Fund" came from the press about the first of January last. Its title is "First Steps in English," and it is designed as a model and outline of the work for a class of deaf-mutes during their first year. The author of the book is Miss C. C. Sweet, one of our most experienced teachers, and in it she gives the first part of a system of instruction in language, which has had the test of several years' actual use in our school-rooms with very satisfactory results. The general outline of this course was marked out by our lamented co-laborer, the late R. S. Storrs. This little book has received very general commendation from teachers of deaf-mutes. It is already in use in several kindred schools, and we have assurance of its adoption by others at the opening of their next school year. The second book of the series is in course of preparation, and we hope to have it issued at no distant date.

A Remington type-writer has been purchased and is doing very useful work for our younger classes. Our pupils come to us, as a rule, with absolutely no knowledge of the English language. To teach them how to use that correctly is the most difficult task which the instructor of deaf-mutes has to accomplish. Nearly the whole time of the pupil for the first three or four years of his course must be given to that one thing. He must be taught with infinite pains how to express even the simplest things of every-day life, things which hear-

ing children six or eight years of age understand and express with the greatest facility. Constant repetition, in varied forms of the simplest language, to describe the commonest things and actions of every-day life, is required. To make this language living it must describe what the pupil actually has seen or known to take place from day to day. From the nature of the case books cannot supply this, but the language must be prepared by the teacher from day to day. Hitherto this has been provided in manuscript lessons. The papyrograph, the electric-pen, and the hektograph have each done good service in this work, but all in manuscript. As a consequence our pupils have been more familiar with script than with print in their earlier years. We believe that the increased familiarity with print, derived from the daily use by the younger pupils of lessons exactly adapted to their capacity, prepared by the type-writer and multiplied by the hektograph, will pave the way to an earlier and freer use of books and newspapers, a result greatly to be desired, and one which will tend to a marked increase in a knowledge and command of the English language, thus opening more and more the way to all knowledge.

During the last two or three years the theory of day-schools for deaf-mutes has been pushed with great energy. This theory provides that deaf-mutes shall be educated in the same building with hearing children in the public schools, uniting with them in some of their school exercises, and joining in all their sports on the play-ground. This, *it is claimed*, would make them more like hearing children than they now are; would make them feel their infirmity less; would make them more cheerful and happy; would allow children to live at home and to have all the advantages of home training and home influence; and would better fit them to mingle with other people, both socially and in business, after they shall have finished their school course.

The chief advocate of this theory is Dr. A. Graham Bell of Washington, D. C., who, during the last two years, has urged it with great vigor. That the same theory has already been tested again and again, and often under most favoring



circumstances—that it has been tried in nearly every country of Western and Southern Europe, and in every instance has proved an utter failure, seems to count for nothing. The same experiment must be repeated here, no matter how many suffer by it.

The history of these experiments has been exhaustively set forth by Prof. J. C. Gordon of the National Deaf-Mute College, in an article in the *American Annals of the Deaf and Dumb* for April, 1885.

Nowhere was the above-mentioned theory given a more thorough trial than in Germany.

\*“The instruction of the deaf was thus made a part of the public school system. Special inducements were held out to teachers to receive deaf pupils, and systematic and persistent efforts were made to qualify teachers for the work. The preferred method was to give a practical training of one entire year in deaf-mute schools established in connection with the normal schools or ‘seminaries’ in which teachers were educated. Deaf-mute schools were opened in the seminaries in Saxony, Westphalia, Posen, Prussia, and Pomerania, for the purpose of training teachers, and the institutions in Berlin, Königsberg, and Münster, together with other deaf-mute schools, afforded special facilities for the same purpose.

“The coöperation of the government was not lacking, for the Ministry at Berlin issued an edict, May 14, 1828, providing for the special instruction of teachers, and granting a suitable sum for carrying the provisions of the decree into effect for a period of six years. The Ministry had great confidence in the efficiency of the scheme, and said that ‘in the course of ten years it will be easily brought about that in all provinces of the kingdom provision will be made for the education of all the unfortunate deaf and dumb.’

“The work was prosecuted with Teutonic thoroughness and vigor, large numbers of educated men became interested in the education of the deaf, great enthusiasm was developed, numerous experiments in methods were made, the artificial system of signs

---

\* “Deaf-Mutes and the Public Schools, from 1815 to the Present Day,” by Prof. J. C. Gordon of the National Deaf-Mute College, Washington, D. C. *American Annals of the Deaf and Dumb*, vol. xxx, pp. 121-143.



of De l'Epee and Sicard was practically banished from Germany, and even the colloquial and natural language of signs, approved by Bebian in France and Gallaudet in America, was looked upon with disfavor. The period under review must be regarded as one of progress in many lines, but the generations of pupils subjected to these educational experiments fared badly enough, and the rose-colored prophecy of the Ministry was not fulfilled."

The distinguished Moritz Hill, Government Inspector of the Instruction of Deaf-Mutes in Western Prussia, and actively employed in the propagation of the Prussian system from 1830, says, *after twenty-eight years of practical experience with it*:

"I have followed with care the results throughout Germany, and I have been compelled finally to recognize the illusory character of the system. School authorities and families are positively opposed to having deaf-mute children in the schools, because they are always a detriment to the hearing children. The hope that each deaf-mute could receive necessary instruction at home in common with hearing children and without injury to the latter, has been abandoned. The results of the entire system have been very slight."

Similar experiments in France, Belgium, England, and elsewhere have met with similar failures.

"Baron de Gerando (1772-1842), officer of the Paris Institution for Deaf-Mutes, and high authority in deaf mute education, said, in 1827, 'special institutions are necessary for the perfecting, unification, and preservation of methods, and indispensable to the full development of the art, and in them alone can deaf-mutes obtain an enlarged and liberal education,' and mentions, as advantages of such institutions, 'economy in collective and simultaneous instruction by accomplished and able masters; the inspiration of genuine comradeship; the pupils help themselves, they excite one another to rivalry, and the more advanced aid and encourage those who lag behind.'"

The theory advocated by Dr. Bell, and now undergoing experiment in Boston, Providence, Portland, and in some other places, has been tried in London during the past ten years.

"The Rev. William Stainer has organized, under the auspices of the School Board of London, eight day schools or 'centers of instruction.' These schools are under the energetic and able supervision of Mr. Stainer, and his experience is of peculiar value. He draws his teachers largely from two training 'colleges' for teachers of the deaf by the oral method, and he has adopted the oral system so far as practicable. He commenced in 1874, with a strong desire to 'mix up' deaf and hearing children as much as possible. Finding it impracticable to have them in the same rooms, the deaf children were placed under special teachers in little class-rooms in the same schools with other children."

In the words of Mr. Stainer:\*

"They are in that class-room during the hours of education. As soon as the class breaks up they go into the play-ground, and mix freely with other children. Well, I must confess that there is something like oil and water about it. You know you may put them together, and you may mix them up. They seem to mix, but they are not assimilated; there is a suppression afterwards, and the deaf children do not, up to the present time, freely associate and assimilate with other children, . . . at the present time, I freely confess that their power of speech is insufficient to enable them to communicate with other children."

To this testimony in regard to the practical working of the day-school theory let me add the experience of one of its victims who has now reached mature life and can speak for himself. In the *Mute's Companion* for March 5, 1885, a well-known graduate of this school, and a man who has had rare success as a teacher of deaf-mutes, thus writes:

"The editor of the *Companion*, on recovering from illness which partly destroyed his hearing when he was ten years old, was sent to a public school, where he struggled along for some months, occupying a seat in the front row, and standing near the teacher in recitations. He looks back upon those months as the most miserable of his existence. Exposed to the heartless gibes of his companions and the brutal impatience of the teacher, excluded from the amusements of his schoolmates, and feeling himself to be

---

\* Report of Convention of Articulation Teachers of the Deaf at New York, June 25-28, 1884, p. 106.

an inferior and an outcast, he became utterly disheartened, lost all ambition, and was rapidly sinking into a state of mere stolid endurance of life. His father had the sense to take him out of school, and, after some years, to send him to the Asylum at Hartford. There new life and energy grew up in him. Among companions afflicted like himself, he forgot his misfortune, his discouragement disappeared as if by magic, the clouds that had settled upon him cleared away, and he entered again into the enjoyment of life. Self-respect and ambition came back to him, and life became once more worth living. It is but natural that he should look with some bitterness upon theories that doom other unfortunate children to the misery he once endured, and from which he so fortunately escaped."

The number who can fully endorse this testimony, as applying to their own cases, is not few. And if such testimony be true in regard to those only partially deaf and possessing the power of almost perfect speech, how must children, who are totally deaf and have no power of speech, fare when placed in similar circumstances?

I cannot refrain from adding the following testimony of one who was a pupil under both systems of instruction—first, spending five years at a manual school, and afterwards, two years at a day-school for the deaf. It was written as a private letter with no thought of publication, but I am permitted to quote a part of it. Of the competency of the witness the letter is sufficient evidence.

"Now, a few words about the system of day-schools versus institutions in general and the institution and the day-school, which I attended, in particular. I should hesitate to say anything against the latter school in special, were it not that the universal cause of truth, the greatest good of the greatest number in the education of deaf-mutes, demands an unreserved statement of facts. The evils inherent in the system are beyond the teacher's control, and it is in vain for men as able as Prof. Bell himself to try to overcome the two-fold difficulties of instruction and management which are inseparable from day-schools.

"In the first place, the system of day-schools may answer well enough for hearing pupils who are able to make up at any time

for their omissions in lessons, but the course of a deaf mute's education is marked, step by step, day by day; hence, one day missed puts the delinquent pupil behind his classmates, and, if he continue to slight his lessons, he will be deficient in knowledge, and at the end of a year be not much if any wiser than at the beginning. If not one, but all the rest, act in the same way, what can be the result, but that the standard of education is shamefully lowered and a mere smattering of knowledge is all that is gained after years of attendance? There ought to be perfect system, strict discipline, and regular attendance pursued in the education of deaf-mutes. These are the essentials to success in the best development of deaf-mutes, as I know from personal experience both as a pupil and a teacher. Now these conditions are impossible in day-schools. Irregularity in attendance is the rule, not the exception. The deep snows of winter and the storms of milder seasons, sudden illness, occasioned by exposure on the way to and from school, and other slight causes, are sufficient to prevent regular attendance. No effectual measures are ever taken by day-schools to enforce regular attendance, and from the nature of the circumstances cannot be. Lax discipline is the rule at such schools. No attempts at moral instruction can be made with any degree of success under a system which imparts but a few crude ideas to the pupil. No religious instruction is ever attempted except after several years have been wasted in the instruction of articulating a few words and phrases, and even then not much can be taught. As a result, the graduates of day-schools are deficient in the knowledge of morals, religion, and language, which is an unpardonable state of things, since by the method of signs they could be successfully taught to comprehend all these things before they have the ability to express their thoughts in correct language. The object of signs is to impart knowledge, and, after ideas, come the appropriate words. I spent two years in a day-school, and though the use of signs was strictly prohibited, all the scholars indulged in the forbidden pastime out of school hours, and not all the rules in the world could prevent the 'irrepressible conflict' between nature as exemplified in the use of gestures and artificial speech, of which they had but a limited knowledge, while their command of pantomime was boundless and far more convenient, as well as more easily comprehended.

“ With the exception of that bright portion of our class known



as semi-mutes, who can profit well enough by any method of instruction, the graduates of oral schools are far less enterprising in spirit, less acquainted with history, science, and religion, than those of the manual schools. As to the advantages which Prof. Bell claims for the articulation system, I don't see them. They are all in his imagination. Facts, as gleaned from both classes in New England, do not confirm his theory of superior results by his fanciful system of 'normal environment.' The graduates of oral schools mingle more with deaf-mutes than they do with the hearing people, and I have had the testimony of many, who are fluent in speech and could easily mingle with the hearing people, that they felt utterly lonesome and sometimes unhappy among those who could hear, and more, that they felt impelled by their natural instincts to seek people of their own kind. At the last annual gathering in Boston, the graduates of the oral schools were quite numerous, and none took more zest in the pleasures of the occasion than they did. Those graduates are fast learning the language of signs, while they still find use for whatever limited powers of speech they have acquired, in communicating with their family, and particular friends, but with strangers they generally express themselves in writing, as they have found out by sad experience that no other people but those with whom they are intimately associated can readily understand their speech.

"It is true that during the five years of my stay at the manual school, I was secluded from the rest of the world, except during the summer vacations; but when I returned home, I entered with as much zest as any other boy of my age into the sports and amusements peculiar to boyhood, such as bathing, base-ball, etc., and always went with crowds of the same age. At no time did I ever shun the society of other people. Nay, more, I was not even conscious of my misfortune, as other people are in the habit of calling the loss of hearing. Habit is second nature and I was so accustomed to my deafness that I never thought of it at all. By a sort of free-masonry among boys, we could easily communicate with each other, partly by gestures and partly by writing, or by the use of the double-hand alphabet with which nearly every school-boy and girl is familiar. These early days of my life are still dear to my memory, undimmed by the shadow of regret. The careless freedom of boyhood, the exuberant joys of existence in the morning of my life, left no room in my heart for discontent or un-



happy repinings at my lot. When, from a desire to be nearer home, I left the manual institution and entered the day-school, no change was made in my life by two years' attendance at an exclusively articulation school, for I still possessed the same heart, the same tastes, and the same nature. I did not make much progress in my education, as, for some reason or other, I was left mostly to my own resources, and by the kindness of the principal I obtained access to the treasures of knowledge, so delightful to my youthful fancy, in the public library. My habit of reading had been previously formed at home by my father's wise encouragement, and to the passion for reading, I owe my subsequent success, first at college and afterwards. The corner-stone of my education was laid in a thorough manner at a manual school, and if I had staid till the day of graduation I would have derived still more solid benefits, but as it was, my education was perfected at that best of manual schools, the National Deaf-Mute College, where the system tends to bring out all the powers of mind and develop them in a manner to render them self acting. None at the day-school seemed to know how to teach me enough so as to prepare me for college, for I had but a limited power of speech, and then all explanations or lectures would have to be made in signs; but as such a method of instruction was tabooed, it was left for me to struggle along as best I could. I see clearly enough now that the system of articulation unaided by gestures was entirely inadequate, not only for me but, also, for the majority of my class. When I entered the college, I was found to be ignorant of history, geography, arithmetic, and grammar, for my course at the manual school was interrupted and was never finished at a day-school, but on account of my youth and command of language, I was allowed to 'pass muster,' probably upon probation; but the method as pursued at college, which left us no dependence but upon ourselves, brought me out of myself, as it were, and from that time forth my mental powers grew apace with my progress. The same system I have adopted in teaching my classes, and the results are the same as in my own case. We must first impart ideas to our pupils by the use of signs, which are nothing but pictorial illustrations, and then we must teach the pupils to think for themselves, never act as their second-selves—an *alter-ego*—as is necessarily the case with all teachers who discard the use of signs."

Of the comparative advantages to deaf-mutes of day-schools and institutions, or boarding-schools, Prof. E. A. Fay, of the National Deaf-Mute College at Washington, D. C., writes as follows : \*

“ When we remember the homes from which many of the pupils come in a large city, the over-crowded, unventilated rooms, the insufficient, ill-prepared food, the exposure to contagious diseases, we cannot believe that health, eyesight, and the physical well-being generally are so well cared for at home as in the institutions, with their well-ventilated rooms, ample play-grounds, gymnasiums, work-shops, regular hours, and abundant nourishing food, chosen and prepared with special reference to the needs of childhood. Then if sickness comes to the pupils of the day-school, their homes, in most cases, afford no such favorable conditions for restoration to health and strength as the convenient and cheerful sick-room of the institution, where the devoted matron, who is often more than a mother to the little children under her charge, the trained nurse, and the skillful physician combine their care and attention for the restoration of the patient. Although deaf children have generally a feebler physical organization than their hearing and speaking fellows, the ratio of sickness and death among the pupils of our institutions, owing to their favorable environment, is far less than among hearing children of the same age in large cities.”

We are aware that the unhealthful conditions of many city homes are the same for deaf-mutes as for many of the hearing children in our public schools, and yet the public schools flourish. But they flourish in spite of those conditions, not because of them. The children must go there or nowhere. No other schools are provided for them. But how much better would it be for many of those children, both physically and morally, how much better citizens would many of them make, if, during the years of their school life, they could be transferred to a place where they could have abundant fresh air and sunshine, and could breathe a purer moral atmosphere? Why should those for whom better conditions are provided be denied the privilege of using them?

---

\* American Annals of the Deaf and Dumb, Vol. XXVII, pp. 184-187.

"The argument that the pupil enjoys more of the society of his relatives and friends than the institution pupil; that he may converse with them out of school; that he may enjoy all the blessed influences of a home while obtaining his school education, seems at the first glance a very weighty one; but in the case of deaf children there are peculiar circumstances which greatly modify, if they do not wholly destroy, its force. Many deaf-mutes in our large cities belong to the poorest and lowest classes. The very cause of their deafness may too often be traced, if not to the cruelty, at least to the carelessness, neglect, or ignorance of their parents. No beneficial influences whatever come to them from their homes. Their relatives and friends cannot or will not—certainly, in most cases, do not—learn to converse with them except by such rude and elementary gestures as serve for necessary directions, questions, and answers. Even when their parents are able and willing to provide for all their wants, home is not the same happy place for them, and does not exert the same benign influence, as with hearing children. A mistaken tenderness and compassion for the deaf child's misfortune often leads to his being petted and indulged to his own injury, while from his playmates and friends he suffers the other extreme of undue teasing and annoyance. In most of the childish games of his brothers and sisters he is unable to join on equal terms. No one can place a higher estimate than we do upon the happy influence of a well-ordered home; but in the case of most deaf children we believe that if the family is made the type and model of the institution, if the family idea predominates in the classification and arrangements, the home influence may be exerted through the institution better than in their own homes."

"The mind of the deaf child who attends a day-school, however well he may be taught, has little outside of the school-room, save the vicious influences already mentioned, to stimulate it to action or aid in its development; but in the institution his education is continually going on, upon the play-ground as well as in the school-room. If his communication with his fellow deaf-mutes by signs is of less assistance in the acquisition of the language of his country than conversation with hearing persons by the manual alphabet, writing, or speech, it has, on the other hand, a much greater effect in stimulating his thought, developing his ideas, and imparting useful information; while a teacher or other officer is

always at hand to explain any doubtful question that may arise in his mind, and carry on the work of the school-room in various ways. Then in the evening the pupil has a period of study of one, two or three hours, according to his age and class, under the supervision of a teacher or some officer appointed for that purpose, in preparation of his lessons for the next day. Add to this that his attendance in the class-room is punctual and regular, while in the day school there are liable to be many interruptions from tardiness and frequent absence, and it will be seen that the educational advantages are decidedly with the institution rather than the day-school. To sum up the whole matter, in the institution the physical, intellectual, and moral welfare of all the pupils is cared for in every way all the time; in the day-school it is cared for, in the case of many of the pupils, only for the five hours, more or less, that they are in the school-room, five or six days in each week."

To these arguments let us add the testimony of the Rev. Wm. Stainer. After ten years of experience as superintendent of day-schools for the deaf in London he says:

"Children who come from their own homes to school for five or six hours, five times a week, as at Boston and London, with no power on the part of the teacher to exercise any control beyond the school-room, or alter the circumstances and surroundings of these children at other times, cannot fairly be compared with children sent to a boarding-school where they are surrounded, in the majority of cases, with much more favorable conditions than in their own homes."

This testimony of Mr. Stainer corresponds with our own experience with, and observation of, pupils taught in day-schools for the deaf. Seventeen such pupils in all have been received into our school after longer or shorter periods of instruction in day-schools. The following table will show the results of the day-school system in the way of mental development in the case of those particular pupils, and the testimony of parents whose children have been instructed under both systems, and reports of disinterested visitors force us to believe that the natural conclusion to be drawn from the facts given does no injustice to the system.

It is producing a crop of mental dwarfs. The fault is not



with the teachers, for there are no more faithful, conscientious, hard-working teachers to be found anywhere than are found in some of the day-schools for the deaf. But they are hampered and restrained by difficulties inherent in the system, and from which it cannot be separated. They are running a race heavily weighted. So long as this is the case the pupils must necessarily be the losers. The mistake is often discovered, but frequently not until too late to be remedied by a change of base.

[In the table given below the figures in column (3) indicate the standing, in years at school, of the class in this school which the pupils, after a fair trial, were found able to enter,—0 signifying a class of beginners, 1 a class of one year's standing, etc.]

Nos.	Age when deafness occurred.	Time under instruction in day-school.	Mental development when admitted to this school.	Mental capacity as indicated by progress after entering this school.
	(1)	(2)	(3)	(4)
1	5½ years,	7 years,	4 years,	very good.
2	4 " "	9 " "	5 " "	very good.
3	congenital,	4 " "	0 " "	fair.
4	2 years,	5½ " "	1 " "	fair.
5	2½ " "	10 " "	4 " "	good.
6	congenital,	2 " "	0 " "	fair.
7	congenital,	1½ " "	1 " "	very good.
8	2½ years,	7 " "	1 " "	fair.
9	3 " "	4 " "	0 " "	good.
10	6 " "	5 " "	1 " "	very good.
11	congenital,	2½ " "	0 " "	0
12	congenital,	2 " "	0 " "	very good.
13	5 years,	5 " "	1 " "	very good.
14	congenital,	5 " "	0 " "	very poor.
15	congenital,(?)	3 " "	0 " "	very poor.
16	congenital,	2 " "	0 " "	very poor.
17	1½ years,	1 " "	0 " "	poor.

That the claim that the pupils of the day-schools for the deaf are so greatly benefited by *home* associations and training is more plausible than real is still further evidenced by the fact that only fifty-eight per cent. of the pupils of the "Horace Mann School" live in Boston, and but fifteen per cent. of the pupils of the "Portland Day-School" reside in that city. How much better care do pupils receive, boarding here and there in private families, as places can be found for them, among people who understand little of their peculiari-



ties and less of their difficulties, than the pupils living in an institution, where everything is arranged with special reference to their good, and where all readily understand them and sympathize with them, and where they are watched over as carefully out of school as in it?

Day-schools for deaf-mutes have been tried in New York, Western Pennsylvania and Philadelphia, but in each case the directors of the school have found that the good of their pupils and their successful instruction demanded a change of plan, and each school in turn has been transformed into a boarding-school. We are informed, also, on reliable authority that in more than one of the existing day-schools there is a growing dissatisfaction among the patrons and supporters of the schools on account of the meagre results obtained.

The School Board of Birmingham, England, voted to establish in that city a day-school for the deaf on the plan of the London schools and sent a committee to inquire into details. After a thorough investigation the committee were satisfied that the educational interests and the general good of the children, for whom they would provide, would be secured better by placing them in established institutions for deaf-mutes than by placing them in a day-school as contemplated by the vote of the School Board. They so reported, and in January last the Board rescinded its vote to establish such a school.

It will be seen, then, from the foregoing statement of facts that experiments with day-schools for the deaf, which have been so extensively and so persistently tried in Germany, France, Belgium, England, and in the United States, all point to one conclusion, the superiority of well-organized institutions, or boarding-schools, over day-schools as a means of developing the minds and character of deaf-mutes.

Sound reasoning without experiment would lead to the same conclusion. Our institutions for deaf-mutes are working on the general plan of organized society. Special well-organized schools with experienced teachers are demanded for all kinds of special instruction. All our technical schools are founded on this principle. Special difficulties require special skill and special means to overcome them. Every-

where we have peculiar institutions with as much concentration as possible for peculiar classes of society. Whether the peculiarity arises from extraordinary genius or the reverse, it is an universally recognized principle that these organized institutions secure the best results with the least expense in the long run. Can anybody tell us why deaf-mutes should be singled out as an exception to this rule?

Again we return thanks for the daily and weekly papers which the publishers continue to send gratuitously to our school. Our pupils read them with interest and profit. A list of them will be found in the appendix.

We would acknowledge again our indebtedness for favors received by our pupils from the N. Y., N. H. & H. R. R., the B. & A. R. R., the Conn. River R. R., Conn. Valley R. R., and the Conn. Western R. R., and would return thanks for the same.

Respectfully submitted,

JOB WILLIAMS, *Principal.*

HARTFORD, May 9, 1885.

## PHYSICIAN'S REPORT.

---

TO THE PRESIDENT AND DIRECTORS OF THE AMERICAN ASYLUM.

*Gentlemen:*—I have the honor to submit my annual report of the state of health of the inmates of this institution.

I am happy to be able to say that no deaths have occurred during the past year, and that there has been but little sickness.

I append a list of the cases that have come under my care, viz. :

CASES.				RESULTS.
1 Consumption,	-	-	-	Sent home.
1 Diphtheria, -	-	-	-	Recovered.
1 Dislocation, -	-	-	-	Recovered.
1 Erysipelas, -	-	-	-	Recovered.
1 Pneumonia, -	-	-	-	Recovered.

All such as required it, have been carefully vaccinated.

Respectfully submitted,

GEORGE W. AVERY, M.D.

## ABSTRACT OF

Dr.

AMERICAN ASYLUM *in account with* W. P. WILLIAMS,

To	Flour, - - - - -	\$966.08
	Meal, - - - - -	12.90
	Crackers and Brown Bread, - - - - -	149.52
	Yeast, - - - - -	99.41
	Hay and Straw, - - - - -	150.57
	Provender and Oats, - - - - -	326.75
	Live Stock, - - - - -	107.00
	Blacksmithing, - - - - -	147.33
	Butter, - - - - -	1,618.13
	Eggs, - - - - -	99.45
	Charcoal, - - - - -	338.50
	Hard Coal, - - - - -	2,500.05
	Wood, - - - - -	41.55
	Furniture, - - - - -	948.13
	Groceries, - - - - -	1,484.51
	Gas Light, - - - - -	782.56
	Meat, Fish, and Fowl, - - - - -	4,036.00
	Medicine, - - - - -	18.71
	Miscellaneous, - - - - -	1,627.79
	Pupils, - - - - -	974.73
	Repairs and Improvements, - - - - -	3,157.24
	Postage, - - - - -	77.38
	Cabinet Shop, - - - - -	521.53
	Shoe Shop, - - - - -	749.69
	Tailor's Shop, - - - - -	164.28
	Fruits and Vegetables, - - - - -	832.36
	Wages, - - - - -	4,512.70
	Washing and Soap, - - - - -	842.07
	Water, - - - - -	516.53
	Balance to New Year, - - - - -	586.91
		<u>\$28,390.36</u>

## CURRENT EXPENSES.

*Steward, for the year ending April 1, 1885.*

CR.

---

By	Balance on hand April 1, 1884,	-	-	-	\$635.26
"	Cash from Treasurer,	-	-	-	23,000.00
"	" " State of Maine,	-	-	-	97.71
"	" " " New Hampshire,	-	-	-	122.71
"	" " " Vermont,	-	-	-	53.13
"	" " " Massachusetts,	-	-	-	386.63
"	" " " Rhode Island,	-	-	-	27.74
"	" " " Connecticut,	-	-	-	140.78
"	" " Pupils,	-	-	-	990.06
"	" " Cabinet Shop,	-	-	-	624.63
"	" " Shoe Shop,	-	-	-	382.15
"	" " Sale of Live Stock,	-	-	-	615.27
"	" " Miscellaneous sources, including sale of surplus stores, pasturage, items of rent, etc.,	-	-	-	1,314.29

---

\$28,390.36



# STATEMENT

OF

## ASSETS BELONGING TO THE AMERICAN ASYLUM.

---

Invested in Bonds and Mortgages of Real Estate, . . . . .	\$79,950.00
Invested in Railroad Bonds, . . . . .	88,228.75
Invested in National Bank Stocks in Conn., . . . . .	90,761.75
Invested in N. Y., N. H. & H. R. R. Stock, . . . . .	15,812.50
Invested in Real Estate in Chicago, . . . . .	5,000.00
Invested in Real Estate in Hartford, . . . . .	98,000.00
Furniture in the Institution, . . . . .	5,390.00
Cash on hand, . . . . .	1,363.15
	<hr/>
	\$384,506.15

Including :

The Blodget Fund, . . . . .	\$2,233.00
The Ellen Lyman Memorial Publication Fund, . . . . .	2,000.00
The Joseph Davis Fund, . . . . .	1,000.00
The Eliza Morison Legacy, . . . . .	2,000.00
And Balance due the "Publication Fund" (income), . . . . .	133.99

HARTFORD, April 7, 1885.

DR. THE AMERICAN ASYLUM IN ACCOUNT WITH ROLAND MATHER, *Treasurer.* CR.

1885, April 7.	1884 April 7. 1885. April 7.		
To paid orders of Directing Committee in favor of the Steward, W. P. Williams, the year past,.....	\$23,000.00	By Balance per Acc't rendered this date,..	\$3,758.73
To paid Salaries, this year, .....	24,443 38	" Rent of Dwellings, the year past,.....	749.99
" " Insurance and Taxes,.....	922.57	" Pay Pupils, the year past,.....	658.75
" " Sundry expenses,.....	652.70	" Received from the six New England States for support of Beneficiaries,..	30,625.00
Investments—"Fund Account," viz.: mortgages of Real Estate,.....	23,100.00	" Income from the Fund,.....	16,806.24
Amount of Clothing bills collected of the States, paid over to the Steward,....	828.70	" Gain on Chicago Real Estate sold,.....	1,299.10
To paid Job Williams, Principal, "Publication Fund," .....	374.84	" Clothing Bills collected of the States,..	828.70
" Balance to Credit of New Account,...	1,363 15	" "Publication Fund"—Interest to April 1, 1885, on the Ellen Lyman Memorial Publication Fund,.....	373.33
	\$74,685.34	" Interest to April 1, 1885, on the Joseph Davis Fund,.....	135.50
		" Bond Account"—Collections of Real Estate loans,.....	10,950.00
		Chicago Real Estate sold,.....	8,500.00
			\$74,685.34

We have this day examined the vouchers for the disbursements charged in the foregoing account, and also the footings of said account, and find them correct.

We have this day examined the vouchers for the securities owned by the American Asylum, as per inventory of the Treasurer, and find that they agree with the inventory.

HARTFORD, April 23, 1885.  
JOHN C. DAY, *Auditor.*  
ATWOOD COLLINS, *Acting Auditor.*

# APPENDIX.

## I. PAPERS, PERIODICALS, ETC.

THE FOLLOWING PAPERS HAVE BEEN SENT TO THE PUPILS GRATUITOUSLY THE PAST YEAR.

NAME.	WHERE PUBLISHED.
Advance,	Inst. for D. & D., Jacksonville, Ill.
Anamosa Eureka,	Anamosa, Iowa.
Auralist,	Inst. for D. & D., Omaha, Neb.
Baby Hawkeye,	Inst. for D. & D., Council Bluffs, Ia.
Boston Transcript,	Boston, Mass.
Canaan Reporter,	East Canaan, N. H.
Christian Secretary,	Hartford, Conn.
Columbian Register,	New Haven, Conn.
Connecticut Herald and Journal,	New Haven, Conn.
Daily Paper for Our Little Ones,	Inst. for D. & D., Rochester, N. Y.
Deaf-Mute Hawk-Eye,	Inst. for D. & D., Council Bluffs, Ia.
Deaf-Mute Journal,	New York City.
Deaf-Mute Index,	In. for D. & D., Colorado Springs, Col.
Deaf-Mute Mirror,	Inst. for D. & D., Flint, Mich.
Deaf-Mute Optic,	Inst. for D. & D., Little Rock, Ark.
Deaf-Mute Record,	Inst. for D. & D., Fulton, Mo.
Deaf Mute Voice,	Inst. for D. & D., Jackson, Miss.
Gazette,	Lewiston, Me.
Goodson Gazette,	Inst. for D. & D., Stanton, Va.
Hartford Courant,	Hartford, Conn.
Hartford Post,	" "
Hartford Times,	" "
Hawk-Eye, Jr.,	Inst. for D. & D., Council Bluffs, Ia.
Kansas Star,	Inst. for D. & D., Olathe, Kansas.
Kennebec Journal,	Augusta, Me.
Kentucky Deaf-Mute,	Inst. for D. & D., Danville, Ky.
Leader,	Brooklyn, N. Y.
Locomotive,	Hartford, Conn.
Maryland Deaf-Mute Bulletin,	Maryland School for the D. & D.
Miss. Hawkeye,	Inst. for D. & D., Council Bluffs, Ia.
Mute's Companion,	Inst. for D. & D., Fairbault, Minn.
Mute Journal of Nebraska,	Inst. for D. & D., Omaha, Neb.
Nashua Telegraph,	Nashua, N. H.
New Haven Palladium,	New Haven, Conn.
Our Dumb Animals,	Boston, Mass.
Portland Transcript,	Portland, Me.
Religious Herald,	Hartford, Conn.
Republican Standard,	Bridgeport, Conn.
Rhode Island County Journal,	Providence, R. I.
Rhode Island Press,	" "
Salem Register,	Salem, Mass.
Silent Observer,	Inst. for D. & D., Knoxville, Tenn.
Texas Mute Ranger,	Inst. for D. & D., Austin, Texas.
Travelers Record,	Hartford, Conn.
Vermont Christian Messenger,	Montpelier, Vt.
Vermont Watchman and State Journal,	" "
Villager,	Amesbury and Salisbury, Mass.
Vis-a-Vis,	Inst. for D. & D., Columbus, Ohio.
West Virginia Tablet,	Inst. for D. & D., Romney, W. Va.
Wisconsin Deaf-Mute Times,	Inst. for D. & D., Delavan, Wis.
Zion's Herald,	Boston, Mass.

## II.

### LIST OF PUPILS

IN THE SCHOOL WITHIN THE YEAR ENDING ON THE 1ST OF MAY, 1885.

#### MALES.

NAME.	RESIDENCE.	ADMISSION.
Acheson, Eugene A.,.....	Boston, Mass.,.....	Sept., 1878
Acheson, Washington D.,.....	Boston, Mass.,.....	Sept., 1884
*Axt, George J.,.....	New Haven, Conn.,....	Sept., 1876
Barrows, Walter C.,.....	East Hartford, Conn.,..	Sept., 1884
Bayless, Thomas B.,.....	Bridgeport, Conn.,....	Sept., 1876
Beaucage, John,.....	Baltic, Conn.,.....	Oct., 1877
Bellows, Herbert G.,.....	Walpole, N. H.,.....	Jan., 1883
Bibbau, Jerry,.....	Manchester, N. H.,....	Jan., 1882
Bishop, George R.,.....	South Boston, Mass.,..	Sept., 1880
Boucher, Abraham,.....	Winchendon, Mass.,...	Sept., 1884
Boucher, Joseph,.....	Winchendon, Mass.,....	Sept., 1884
Breen, Melvin,.....	Princeton, Me.,.....	Sept., 1884
Brigham, Charles,.....	Whitinsville, Mass.,...	Sept., 1881
Bronson, Charles,.....	Plainville, Conn.,.....	Sept., 1882
Brown, George E.,.....	South Norwalk, Conn.,..	Sept., 1884
Brown, Isaac A.,.....	Rockland, Me.,.....	Sept., 1878
Brush, Charles S.,.....	Boston, Mass.,.....	Sept., 1877
*Byrne, Michael,.....	Fall River, Mass.,.....	Sept., 1879
Cantlon, Daniel,.....	Winchester, N. H.,....	Sept., 1881
Carter, Howard S.,.....	Hartford, Conn.,.....	Sept., 1881
*Casey, Henry,.....	Taunton, Mass.,.....	Sept., 1881
Changnon, Moses,.....	Chicopee Falls, Mass.,..	Sept., 1882
Clouthier, George E.,.....	Concord, N. H.,.....	Sept., 1883
Conant, Frank A.,.....	Chelsea, Mass.,.....	Sept., '80 & '83
Conolly, Timothy,.....	West Boylston, Mass.,..	Sept., 1881
Cossette, J. Thelesphor,...	Meriden, Conn.,.....	Sept., 1884

NAME.	RESIDENCE.	ADMISSION.
Cozzens, Ralph L.,.....	Holliston, Mass.,.....	Sept., 1881
Creamer, Pelham S.,.....	So. Waldoboro, Maine,..	Sept., 1880
Culver, John L.,.....	East Dorset, Vt.,.....	Sept., 1883
Culver, Heman M.,.....	East Dorset, Vt.,.....	Sept., 1881
Delcourt, James,.....	Willimantic, Conn.,.....	Sept., 1883
Dolan, John,.....	Jamaica Plain, Mass.,...	Dec., 1884
Dolan, Owen,.....	Attleboro Falls, Mass.,..	Sept., 1882
Doying, Charles E.,.....	Rockville, Conn.,.....	Sept., 1876
Eaton, Archie B.,.....	East Weare, N. H.,.....	Sept., 1879
Edberg, Gustav,.....	No. Easton, Mass.,.....	Sept., 1879
*Eddy, George W.,.....	New Britain, Conn.,.....	Sept., 1876
Fenaghtie, Patrick,.....	Boston, Mass.,.....	Sept., 1876
Flynn, John F.,.....	Bangor, Maine,.....	Oct., 1877
Furrow, Arthur,.....	Agawam, Mass.,.....	Sept., 1879
Gerou, Louis,.....	Waterbury, Conn.,.....	Oct., 1884
Gilheeney, Frank,.....	Providence, R. I.,.....	Sept., 1883
*Greenough, Frederick,..	Springfield, Mass.,.....	Sept., 1876
Gray, Francis G.,.....	Belfast, Me.,.....	Sept., 1884
Griffin, James,.....	Boston, Mass.,.....	Sept., 1880
Gunnison, Fred. A.,.....	Topsfield, Mass.,.....	Sept., 1878
Guyott, Edward W.,.....	Holyoke, Mass.,.....	Sept., 1880
Habert, John,.....	West Dummerston, Vt.,..	Jan., 1882
Hackman, Harry,.....	Providence, R. I.,.....	Sept., 1883
Hanson, Louis S.,.....	Camden, Maine,.....	Sept., 1882
*Harney, John,.....	Middletown, Conn.,.....	Sept., 1876
Harvey, Irus W.,.....	Greeneville, Conn.,.....	Sept., 1883
Hatch, Chas. M.,.....	Danbury, Conn.,.....	Sept., 1884
*Hawes, George B.,.....	Embden, Maine,.....	Sept., 1880
Hine, Edward H.,.....	Waterbury, Conn.,.....	Sept., 1881
Hopkins, Willie,.....	No. Whitefield, Maine,..	Sept., 1882
*Horgan, Timothy,.....	East Cambridge, Mass.,..	Sept., 1879
Jones, Charles E.,.....	Hancock, Mass.,.....	Sept., 1882
Kearns, Jeremiah,.....	Manchester, N. H.,.....	Sept., 1877
Kilbourn, George A.,.....	Salisbury, N. H.,.....	Sept., 1884
Kimball, Edwin,.....	Burke, Vt.,.....	Sept., 1881
King, Joseph,.....	Willimantic, Conn.,.....	Sept., 1884
Lane, William H.,.....	Fall River, Mass.,.....	Sept., 1877



NAME.	RESIDENCE.	ADMISSION.
Laverdière, Louis P.,.....	Southbridge, Mass.,....	Sept., 1880
Lewis, Harry S.,.....	Waterbury, Conn.,....	Sept., 1883
Little, Albert,.....	Colebrook, N. H.,.....	Nov., 1881
*Long, Thomas,.....	Whitinsville, Mass.,....	Sept., 1876
Maher, Frederick J.,.....	New Haven, Conn.,....	Sept., 1880
Marshall, Gilbert F.,.....	Bridgeport, Conn.,....	Sept., 1879
*Marshall, Leslie G.,.....	Bridgeport, Conn.,....	Sept., 1882
McAtee, James,.....	Boston, Mass.,.....	Oct., 1882
McCarthy, Samuel N.,....	Norwich, Conn.,.....	Sept., 1884
McCrate, Daniel,.....	Whitinsville, Mass.,....	Sept., 1878
McCue, Patrick F.,.....	Hartford, Conn.,.....	Oct., 1878
McFarland, James,.....	Boston, Mass.,.....	Sept., 1883
McInerny, Thomas,.....	Winsted, Conn.,.....	Sept., 1881
McIntyre, Ernest,.....	Warren, Maine,.....	Sept., 1880
*McKeon, Andrew,.....	New London, Conn.,...	Sept., 1883
McManus, Charles S.,. . .	Newark, N. J.,.....	Oct., 1884
McSorley, Hugh W.,.....	East Hampden, Maine,..	Sept., 1884
McTernen, John,.....	Stamford, Conn.,.....	Sept., 1881
Mitchell, Thomas,.....	Fall River, Mass.,.....	Sept., 1883
Murray, John,.....	Winchendon, Mass.,....	Sept., 1884
O'Brien, James O.,.....	Fall River, Mass.,.....	Sept., 1879
*O'Connor, Thomas,.....	So. Newmarket, N. H.,..	Sept., 1877
Page, Edmund,.....	Burlington, Maine,....	Sept., 1880
*Paro, Clefos,.....	Lebanon, N. H.,.....	Sept., 1880
Pearce, Frederick W.,....	Niantic, Conn.,.....	Sept., 1881
Peirce, Joseph C.,.....	Taunton, Mass.,.....	Sept., 1884
Perry, Edgar W.,.....	Pittsburgh, N. H.,....	Sept., 1880
*Porter, Amai,.....	Spencer Depot, Mass.,..	Sept., 1876
Porter, Alfred,.....	Spencer, Mass.,.....	Sept., 1883
Provonsha, Willie,.....	Holland, Vt.,.....	Sept., 1882
*Quigley, Charles A.,....	South Boston, Mass.,....	Nov., 1882
*Rathbun, Ira S.,.....	New Bedford, Mass.,....	Jan., 1876
Richards, Hermon L.,....	Westport, Conn.,.....	Sept., 1879
*Riggs, Charles A.,.....	North Leeds, Maine,....	Sept., 1878
Robinson, George H.,....	Concord, N. H.,.....	Sept., 1878
Robinson, Frederick R.,..	Concord, N. H.,.....	Sept., 1881
Royden, Chauncey L.,....	Milford, Conn.,.....	Sept., 1883

NAME.	RESIDENCE.	ADMISSION.
Ryan, Jeremiah,.....	Concord, N. H.,.....	Sept., 1881
Saleski, Anton,.....	Meriden, Conn.,.....	Sept., 1878
Sanborn, Warren,.....	Palermo, Maine,.....	Sept., '80 & '83
Sears, Walter H.,.....	Dalton, Mass.,.....	Sept., 1881
Shaw, Willie E.,.....	Portland, Maine,.....	Sept., 1884
*Shea, Daniel,.....	Rockland, Mass.,.....	Sept., 1877
Shea, John,.....	Rockland, Mass.,.....	Sept., 1878
Sheehan, Thomas,.....	Saundersville, Mass.,...	Sept., 1881
Shiatte, Frederick,.....	Manchester, N. H.,.....	Sept., 1878
Simonds, Adelbert J.,....	South Strafford, Vt.,....	Sept., 1880
Skillin, Fred. G.,.....	Roxbury, Mass.,.....	Sept., 1878
Snyder, Lawrence M.,....	New Haven, Conn.,....	Sept., 1878
Spear, Charles F.,.....	Belfast, Maine,.....	Sept., '78 & '80
Sullivan, James C.,.....	Weston, Mass.,.....	Sept., 1880
Taylor, Dana B.,.....	Wells, Maine,.....	Sept., 1878
Thayer, Henry E.,.....	H'rtl'd Four Corners, Vt.,	Sept., 1879
Varney, Fred. S.,.....	Farmington, N. H.,....	Sept., 1883
Walker, Chas. R.,.....	Springfield, Mass.,....	Sept., 1879
Walls, Gratton P.,.....	Rockland, Mass.,.....	Oct., 1884
Walsh, Michael F.,.....	Wolcott, Conn.,.....	Sept., 1879
Ward, Willie,.....	Holyoke, Mass.,.....	Sept., 1878
White, Walter W.,.....	Bellows Falls, Vt.,....	Sept., 1882
White, Thomas,.....	Boston, Mass.,.....	Sept., 1883
*Wise, James H.,.....	Cambridgeport, Mass.,..	Sept., 1877
Worcester, Ira E.,.....	Amherst, N. H.,.....	Sept., 1879

## F E M A L E S .

NAME.	RESIDENCE.	ADMISSION.
Acheson, Pauline M.,.....	Boston, Mass.,.....	Sept., 1878
Allen, Mabel H.,.....	Willimantic, Conn.,....	Sept., 1881
Baldwin, Harriet,.....	New Haven, Conn.,....	Sept., 1875
Beatty, Margaret,.....	Chelsea, Mass.,.....	Jan , 1882
Boucher, Mary,.....	Winchendon, Mass.,....	Sept., 1884
Brennan, Mary E.,.....	New Haven, Conn.,....	Sept., 1883
Bronson, Isabelle E.,.....	Plainville, Conn.,.....	Sept., 1880
Brown, Emma,.....	Danbury, Conn.,.....	Sept., 1881
Brown, E. Belle,.....	Boston, Mass.,.....	Sept., 1881
Buck, Lucy E.,.....	Stonington, Conn.,....	Sept., 1879
Bunce, Sarah A.,.....	Freedom, N. H.,.....	Sept., 1884
Butterfield, Fannie N.,....	Waterville, Maine,....	Sept., 1881
Cantlon, Kate,.....	Winchester, N. H.,....	Sept., 1882
Changnon, Mary,.....	Chicopee Falls, Mass.,..	Sept., '78 & '81
*Culver, Annie J.,.....	East Dorset, Vt.,.....	Sept., 1878
Cummings, Jennie,.....	Somerville, Mass.,.....	Sept., 1884
Downey, Mary T.,.....	South Boston, Mass.,....	Oct., 1876
Dufault, Allizia,.....	East Brookfield, Mass.,..	Sept., 1882
Eaton, Gracie,.....	Waitsfield, Vt.,.....	Sept., 1881
*Frueh, Louisa J.,.....	Hamden, Conn.,.....	Sept., 1880
Garten, Nellie,.....	Stafford Springs, Conn.,.	Sept., 1881
Goodrow, Anna,.....	Claremont, N. H.,.....	Sept., 1883
*Gray, Clara M.,.....	Hodgdon, Maine,.....	Sept., 1876
*Griffin, Mary E.,.....	Fall River, Mass.,.....	Sept., 1878
Hall, Addie T.,.....	New Haven, Conn.,....	Sept., 1884
Hanscum, Marinda,.....	Hartford, Conn.,.....	Feb., 1883
Hopkins, Anna E.,.....	Augusta, Maine,.....	Jan., 1878
Jencks, Carrie L.,.....	East Hartford, Conn.,..	Sept , 1877
Katon, Rosanna,.....	Boston, Mass.,.....	Sept., 1884
Keating, Mary A.,.....	Ludlow, Vt.,.....	Sept., 1883
Kelly, Alice G.,.....	Westford, Mass.,.....	Sept., 1884
Kendall, Florence M.,....	Strafford, Vt.,.....	Sept., 1877

NAME.	RESIDENCE.	ADMISSION.
Knox, Fannie B.,.....	Hartford, Conn.,.....	Oct., 1881
*Larkin, Winnie,.....	Fitchburgh, Mass.,.....	Sept., 1876
*Leonard, Alice,.....	W. Bridgewater, Mass.,	Dec., 1877
Lockhart, Dora M.,... ..	Haverhill, Mass.,.....	Sept., 1878
Love, Mary H.,.....	Methuen, Mass.,.....	Sept., 1881
Lynch, Mary E.,.....	Greenville, R. I.,.....	Sept., 1880
Markham, Lola E.,.....	E. Longmeadow, Mass.,	Sept., 1882
Marnock, Anna M.,.....	South Albany, Vt.,.....	Sept., 1879
Marshall, Edith H.,.....	Bridgeport, Conn.,.....	Sept., 1879
Marvel, Bertha,.....	New Bedford, Mass.,...	Sept., 1884
McKay, Ellen E.,.....	Bristol, R. I.,.....	Nov., 1878
Merrill, Emma M.,.....	Exeter, N. H.,.....	Sept., 1880
McDonald, Nellie,.....	New Haven, Conn.,....	Sept., 1882
McSorley, Mary A.,.....	East Hampden, Maine, ..	Sept., 1884
Nadeau, Geneva,.....	Houlton, Maine,.....	Sept., 1881
Nelligan, Anne,.....	N. Cambridge, Mass.,...	Sept., 1879
*Newton, Alice E.,.....	Hartford, Vt.,.....	Sept., 1874
Niebuhr, Lizzie,.....	Meriden, Conn.,.....	Sept., 1882
Nolan, Margaret,.....	Concord, N. H.,.....	Sept., 1877
*Noyes, Flora L.,.....	Franklin Falls, N. H.,..	Sept., 1876
*Noyes, Nora C.,.....	Franklin Falls, N. H.,..	Sept., 1876
O'Connell, Katie,.....	Holliston, Mass.,.....	Sept., 1880
O'Neil, Ellen,.....	Stafford, Conn.,.....	Sept., 1877
Packard, Adella M.,.....	Wales, Mass.,.....	Sept., 1878
Patterson, Florence A.,...	Waterbury, Vt.,.....	Sept., 1884
Perry, Minnie B.,. ....	Pittsburgh, N. H.,.....	Sept., 1879
Pierce, Alice E.,.....	Waterbury, Conn.,.....	Sept., 1881
Prime, Hattie M.,.....	Foxborough, Mass.,....	Sept., 1884
Ratchford, Mary,.....	Worcester, Mass.,.....	Sept., 1880
Rock, Cordelia.....	Staffordville, Conn.,....	Sept., 1879
†Russell, Kate E.,.....	Lovell Center, Maine....	Sept., '75 & '80
Sawhill, Elizabeth I.,....	Pittsburgh, Pa.,.....	Dec., 1883
Schmahl, Emilie,.....	New Haven, Conn.,....	Sept., 1877
Sherman, Retta B.,.....	Colchester, Conn.,.....	Sept., 1884
*Simmons, Cyntha M.,....	Scituate, R. I.,.....	Sept., 1879
Smart, Carrie,.....	St. Albans, Maine,....	Sept., 1880
Smith, H. Emma,.....	Waterbury, Conn.,.....	Sept., 1883

NAME.	RESIDENCE.	ADMISSION.
Sparks, Maybel B.....	Norwich, Conn.,.....	Sept., 1881
Stetson, Maybelle H.,.....	Middleboro', Mass.,.....	Sept., 1881
Sullivan, Honora,.....	Cambridgeport, Mass.,..	Sept., 1879
Sullivan, Bessie,.....	Cambridgeport, Mass.,..	Sept., 1883
Tuller, Fannie A.,.....	West Suffield, Conn.,..	Sept., 1876
*Upton, Abbie D.,.....	Bethel, Maine,.....	Sept., 1875
Van Houten, Jennie L.,...	Paterson, N. J.,.....	Oct., 1881
Weis, Elis��,.....	New Haven, Conn.,....	Sept., 1880
Weller, Mary E.,... ..	Bridgeport, Conn.,....	Sept., 1882
*Wells, Mary B.,.....	Boston, Mass.,.....	Sept., 1883
Wheeler, Gracie B.,.....	New Haven, Conn.,....	Sept., 1884
Whitehouse, Daisy,.....	Liberty, Maine,.....	Sept., 1880
Wright, Emma E. P.....	Milford, Mass.,.....	Nov., 1880
Wright, Mary A.,.....	Wareham, Mass.,.....	Sept., 1884
York, Emma F.,.....	St. Albans, Maine,....	Sept., 1884

## SUMMARY.

SUPPORTED BY	MALES.	FEMALES.	TOTAL.
Maine,.....	16	10	26
New Hampshire,.....	17	8	25
Vermont,.....	8	7	15
Massachusetts,.....	49	28	77
Rhode Island,.....	2	3	5
Connecticut,.....	32	26	58
Friends,.....	1	2	3
Total,	125	84	209

Whole number in attendance within the year,.....209

Greatest number at any one time,.....177

Average attendance during the year,.....175

\* Not present May 1, 1885.

† Dead.



## TERMS OF ADMISSION.

---

I. The Asylum will provide for each pupil board, lodging, and washing, the continual superintendence of health, conduct, manners and morals, fuel, lights, stationery, and other incidental expenses of the school room, for which, including TUTION, there will be an annual charge of one hundred and seventy-five dollars.

II. In case of sickness the necessary extra charge will be made.

III. No deduction from the above charge will be made on account of vacation or absence—except in case of sickness.

IV. Payments are always to be made six months in advance, for the punctual fulfillment of which a satisfactory bond will be required.

V. Each person applying for admission must be between the ages of EIGHT and TWENTY-FIVE years; must be of good natural intellect, capable of forming and joining letters with a pen legibly and correctly, free from any immoralities of conduct and from any contagious disease.

---

Application for the benefit of the legislative appropriations in the States of Maine and New Hampshire should be made to the Secretaries of those States respectively—in Massachusetts to the Secretary of the Board of Education—in each case stating the name and age of the proposed beneficiary, and the circumstances of his parents or guardian. Applications as above in Vermont, Rhode Island, and Connecticut, respectively, should be made to his Excellency, the Governor of the State. In all cases a certificate from two or more of the selectmen, magistrates, or other respectable inhabitants of the township or place to which the applicant belongs, should accompany the application.

Those applying for the admission of *paying pupils* may address their

letters to the principal of the Asylum, and on all the letters from him respecting the pupils postage will be charged.



The time for admitting pupils is the *second Wednesday of September*, and at no other time in the year. Punctuality in this respect is very important, as it cannot be expected that the progress of a whole class should be retarded on account of a pupil who joins it after its formation. Such a pupil must suffer the inconvenience and the loss.

It is earnestly recommended to the friends of the deaf and dumb to have them taught to write a fair and legible hand before they come to the Asylum. This can easily be done, and it prepares them to make more rapid improvement.

When a pupil is sent to the Asylum, unless accompanied by a parent or some friend who can give the necessary information concerning him, he should bring a written statement embracing specifically the following particulars :

1. The name in full.
2. Post-office address and correspondent.
3. Day, month, and year of birth.
4. Cause of deafness.
5. Name of the parents.
6. Names of the children in the order of their age.
7. Were the parents related before marriage? If so, how?
8. Has the pupil deaf-mute relatives? If so, what?

The pupil should be *well clothed* — that is, he should have both summer and winter clothing enough to last one year, and should be furnished with a list of the various articles, each of which should be marked. A small sum of money — not less than five dollars — should also be deposited with the Steward of the Asylum for the personal expense of the pupil not otherwise provided for.

Packages of clothing or boxes sent by express will reach the pupils safely.  *The express charges should in all cases be prepaid.* 

Careful attention to these suggestions is quite important.

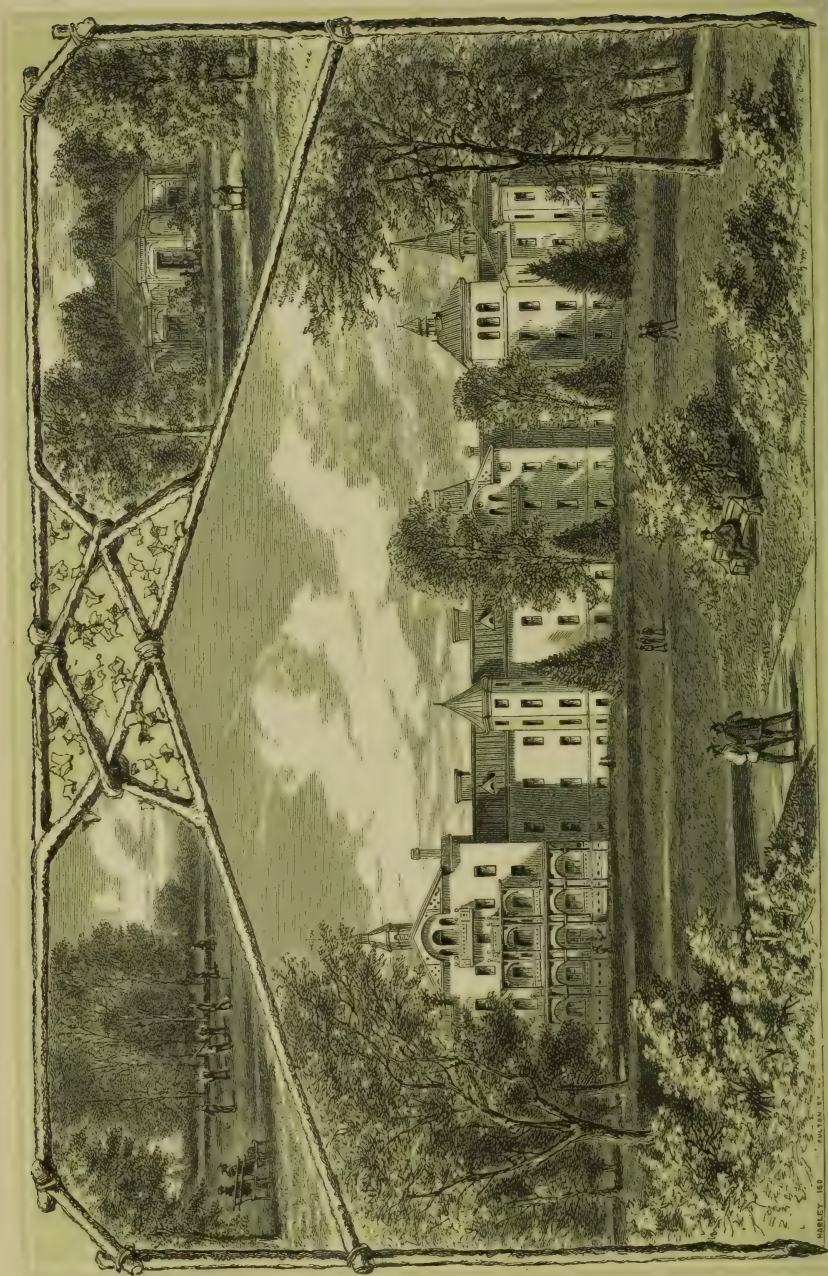
There is but one vacation in the year. It begins on the last Wednesday in June, and closes on the second Wednesday of September. It is expected that the pupils will spend the vacation at home. This arrangement is as desirable for the benefit of the pupils, who need the recreation and change of scene, as for the convenience of the Institution, thus affording opportunity for the necessary painting, cleansing, etc. The

present facilities for travel enable most of the pupils to reach home on the evening of the day they leave Hartford. Every pupil is expected to return punctually at the opening of the school on the second Wednesday of September.

On the day of the commencement of the *vacation* an officer of the Asylum will accompany such pupils as are to travel on the railroads between Hartford and Boston, taking care of them and their baggage, on condition that their friends will make timely provision for the expenses on the way, and engage to meet them immediately on the arrival of the *early* train at various points on the route previously agreed on, and at the station of the Boston & Albany Railroad in Boston. A similar arrangement is made on the Connecticut River Railroad as far as White River Junction. No person will be sent from the Asylum to accompany the pupils on their return; but if their fare is paid and their trunks are checked to Hartford, it will be safe to send them in charge of the conductor.

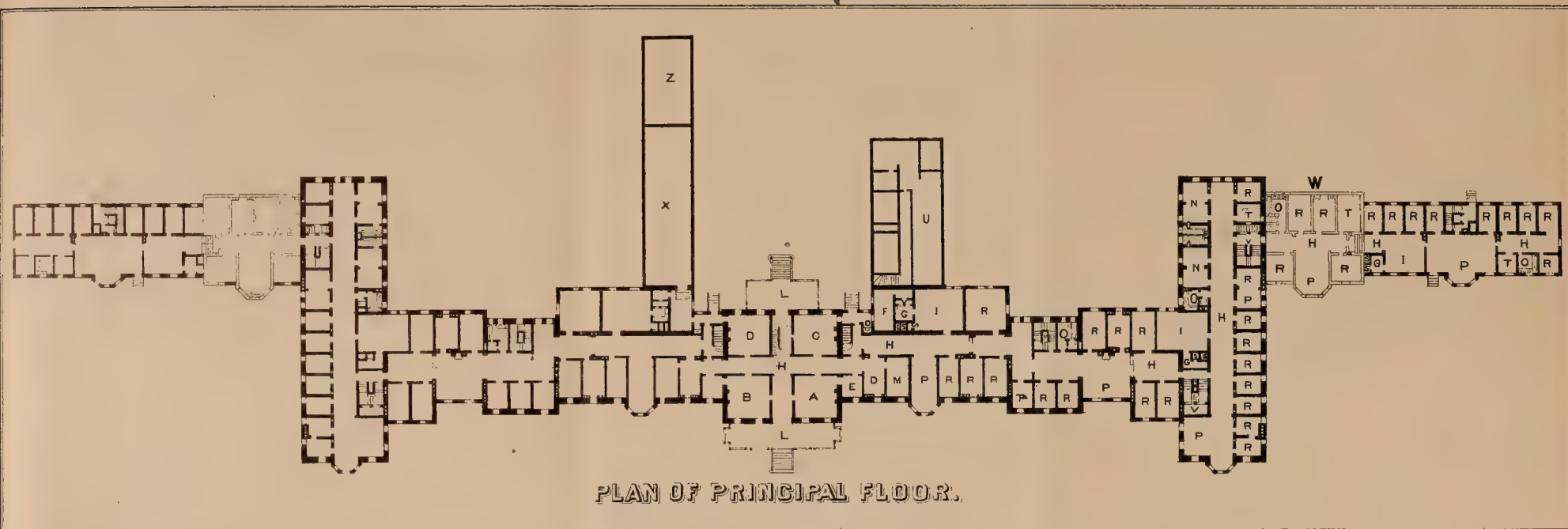






CENTER AND NORTH WING OF THE RETREAT.





**A** Superintendents Office.  
**B** Public Parlor.  
**C** Stewards Office.  
**D** Reception Rooms.  
**E** Dispensary.  
**F** Store Room.

**G** Pantry.  
**H** Corridor.  
**I** Dining Rooms.  
**K** Dust Flues.  
**L** Porticos.  
**M** Directors Room.  
**N** Suites of Rooms (Parlor, Bed Room, Bath Room & Water Closet.)

**O** Bath Rooms & Water Closets.  
**P** Parlors.  
**R** Bed Rooms.  
**S** Lifts.  
**T** Clothes Rooms.  
**U** Bakery and Store Rooms.

**V** Ventilating Shafts  
**W** Extended Addition  
**X** Amusement Hall  
**Z** Boiler House



THE  
SIXTY-FIRST ANNUAL REPORT  
OF THE  
OFFICERS  
OF THE  
RETREAT FOR THE INSANE,  
AT  
HARTFORD, CONN.,  
*APRIL, 1885.*



HARTFORD, CONN.:  
PRESS OF THE CASE, LOCKWOOD & BRAINARD COMPANY.  
1885.



OFFICERS  
OF THE  
RETREAT FOR THE INSANE,  
FOR THE YEAR 1885.

---

WILLIAM R. CONE, *President.*  
G. W. RUSSELL, *Vice-President.*  
THOMAS SISSON, *Treasurer.*  
WM. F. TUTTLE, *Auditor.*  
JONATHAN B. BUNCE, *Secretary.*

DIRECTORS CHOSEN AT THE ANNUAL MEETING.

GURDON W. RUSSELL,	NATHANIEL SHIPMAN,
E. K. HUNT,	THOMAS SISSON,
JAMES L. HOWARD,	JOS. R. HAWLEY,
GEORGE P. BISSELL,	WM. F. TUTTLE,
MARK HOWARD,	RODNEY DENNIS,
J. B. BUNCE,	THOMAS O. ENDERS,
G. M. BARTHOLOMEW,	GEO. M. WELCH,
F. B. COOLEY,	FRANCIS GOODWIN,
CHARLES M. BEACH,	JOHN C. DAY,
GEORGE W. MOORE,	ROWLAND SWIFT.

MANAGERS.

WILLIAM R. CONE, *Ætna Bank.*  
GURDON W. RUSSELL, *207 Farmington Avenue.*  
RODNEY DENNIS, *Travelers Ins. Co.*

---

HENRY P. STEARNS, M.D., *Physician and Superintendent.*  
CHARLES W. PAGE, M.D., *Assistant Physician.*  
G. S. WRIGHT, M.D., *Junior Assistant Physician.*  
REV. WM. THOMPSON, D.D., *Chaplain.*  
REV. GEO. E. SANBORNE, *Steward.*  
MRS. GEO. E. SANBORNE, *Matron.*  
MISS HARRIET E. BACON, *Supervisor.*  
H. J. THOMPSON, *Clerk.*



## VISITING COMMITTEE.

---

### DIRECTORS.

1885.

June, Messrs. SHIPMAN, BUNCE, HAWLEY, BEACH.  
July, " WELCH, SISSON, J. L. HOWARD, J. C. DAY.  
Aug., " GOODWIN, BISSELL, M. HOWARD, MOORE.  
Sept., " COOLEY, ENDERS, BARTHOLOMEW, SWIFT.  
Oct., " SHIPMAN, BUNCE, HAWLEY, BEACH.  
Nov., " WELCH, SISSON, J. L. HOWARD, TUTTLE.  
Dec., " GOODWIN, BISSELL, M. HOWARD, MOORE.

1886.

Jan., " J. C. DAY, ENDERS, BARTHOLOMEW, SWIFT.  
Feb., " SHIPMAN, BUNCE, HAWLEY, BEACH.  
Mar., " WELCH, SISSON, J. L. HOWARD, COOLEY.  
April, " GOODWIN, BISSELL, M. HOWARD, MOORE, TUTTLE.  
May, " J. C. DAY, ENDERS, BARTHOLOMEW, SWIFT.

### MEDICAL VISITORS.

E. K. HUNT, M.D.,	E. C. KINNEY, M.D.,
GURDON W. RUSSELL, M.D.,	FRANCIS BACON, M.D.,
P. M. HASTINGS, M.D.,	GEORGE L. PORTER, M.D.

### VISITING COMMITTEE OF LADIES.

Mrs. WM. R. CONE,	Mrs. G. W. RUSSELL,
Mrs. E. G. HOWE,	Mrs. THOMAS SISSON,
Mrs. F. B. COOLEY,	Mrs. J. H. SPRAGUE.

THE SIXTY-FIRST ANNUAL REPORT  
OF THE  
BOARD OF MANAGERS  
TO THE  
BOARD OF DIRECTORS OF THE RETREAT FOR THE INSANE.  
*APRIL, 1885.*

---

The close of this sixty-first year of Retreat work, enables us to record satisfactory results, as will be shown in detail in the report of the superintendent and the other yearly reports submitted to the Board of Directors, and the treasurer's report already acted upon at the annual meeting of the corporation.

In our last report we called attention to the desirableness of frequent visits to the Retreat by our citizens and the public generally, as well as by the friends of the patients themselves, and those whose duty requires them to make such visits, as relieving the monotony and tedium of the indoor life of the patients, giving them pleasant recollections, topics to talk about, incidents to remember and relate, and sometimes to laugh over; and we would again repeat the request of the superintendent, that the public be assured that the Retreat is not only always open to such visits, but visitors are always welcome to the halls of the institution; and we venture to say, that they will always find such uniform order, neatness, and evidence of comfort and sources of diversion in the halls, dining-rooms, and every part of the buildings, that, to most of them, it will be a revelation as to what is being done for the restoration of a class of patients who command their largest sympathy.

Our buildings, grounds, and the furnishing of our halls have been kept up to that high standard which the character of our

patients in their own home-life has rendered essential to their contentment and comfort here. Our dining-halls and all their appurtenances and supplies will challenge comparison with the best boarding accommodations anywhere. We assert that nothing is open to criticism here as compared with the table appointments and supplies in well-to-do families in their own homes.

Cases are too often brought to our notice which are deserving of our sincerest sympathy, but which we unfortunately are unable to relieve. There are many whose pecuniary ability will not permit them to enter the Retreat. Their past relations in life, and their present condition, warrant a very favorable consideration. These, and that of many poor people, residents near here, and known to many of our friends, warrant the belief that here is a proper charity for those who can easily relieve some of the burdens of life. While the state is supposed to provide for all its poor, yet many of these are not of the class of the poor for whom provision is made. Other institutions like ours are in the receipt of funds for these purposes, and there is no reason why the small endowment, which the Retreat now has, should not be largely increased. The whole matter is earnestly presented to the consideration of the charitable.

When Walnut Hill was purchased, some few years ago, it was with the expectation, that at no distant future, accommodations would be provided for a portion of the patients who, from time to time, during the milder and pleasant portions of the year, might enjoy a sort of country home, and be benefited by the change and variety which such a resort would furnish. The plan being to erect one or more proper buildings, upon these extensive, sighly, and beautiful grounds, to accommodate from fifteen to twenty patients, and during certain parts of the year, when the country is most beautiful and attractive, give, in succession, to the patients on the various halls, this change, from strictly retreat life to the occupancy of this country home, and the variety and liberty of a sort of country life which could be given them here. The Board would suggest that the matter be referred to a committee to mature some plan for carrying out this project of relief, and report to the Board of Directors.

During the year, death has removed from us the Honorable Calvin Day, who died on the 10th of June, 1884, at the advanced age of 81 years, the oldest Director of the Retreat, its vice-president

for many years prior to and at the time of his death, and for thirty-five years intimately identified with its success and connected with its management. A distinguished citizen in the community in which he lived, a man to be depended on, a consistent and exemplary Christian gentleman. As a member of this board of managers we bear our testimony to his excellent character and great worth.

For more than forty years, Captain Edwin Johnson has been in the employ of the Retreat, in the capacity of a carpenter, and so continued almost up to the time of his death, which occurred on the 20th day of August, 1884, at the age of 77 years. His long-continued employment and familiarity with every part of the premises, and the direction and location of every drain, pipe, and hydrant, made his services almost indispensable. His practical good sense and judgment, in relation to the various alterations and changes that have taken place in the Retreat grounds and buildings, and the mode and extent of their execution, have uniformly been sought and greatly aided in perfecting and carrying into execution the plans for improvements made during his long and satisfactory employment. Captain Johnson has had much to do in the successful arrangement of our grounds, yards, and buildings. Our record of him is, that though an unpretending, he was an honest, faithful man, and had the confidence and esteem of us all.

The Board bear their testimony to the fidelity of the superintendent, and all his assistants, in the satisfactory management of the Retreat during the year now closed.

By order of the Board,

WM. R. CONE, *Chairman*.

## MEDICAL VISITORS' REPORT.

---

The Board of Medical Visitors would respectfully report that they have continued their visits to the Retreat as heretofore, and find that the general management, treatment, and condition of the patients is quite satisfactory.

The sanitary condition of the institution is very good, and as far as we know or can judge there is nothing of injury which can come to the inmates. The air in most of the halls is as pure as in any of our dwellings ; in fact more so than in very many. Of course with some of the patients perfect cleanliness cannot always be constantly maintained, but with careful and systematic watching it is surprising how little there is for real complaint.

Apparently the Retreat was never in better condition, and it is a subject for congratulation that it is so well managed, and is capable of affording relief to so many.

E. K. HUNT, M.D.  
GURDON W. RUSSELL, M.D.  
P. M. HASTINGS, M.D.  
FRANCIS BACON, M.D.  
GEORGE L. PORTER, M.D.  
E. C. KINNE, M.D.

HARTFORD, May 7, 1885.



## REPORT OF THE SUPERINTENDENT.

---

*To the Board of Directors of the Retreat for the Insane :*

GENTLEMEN: In accordance with the usual custom, I have the honor herewith to submit the annual report of the Retreat:

On the 31st of March, 1884, the whole number in the Retreat was, of males, six-eight; of females, sixty-six; total, one hundred and thirty-four. <sup>Number of patients.</sup>

The admissions during the year have been, of males, sixty-five; of females, forty-one; total, one hundred and six. <sup>Admissions.</sup>

The discharges have been, of males, fifty-eight; of females, thirty-six; total, ninety-four. <sup>Discharges.</sup>

The deaths during the same period have been, of males, thirteen; of females, five; total, eighteen. <sup>Deaths.</sup>

The whole number under treatment during the year has been, of males, one hundred and thirty-three; of females, one hundred and seven; total, two hundred and forty. <sup>Whole number.</sup>

The number in the Retreat, on the 31st of March, 1885, is, of males, seventy-five; of females, seventy-one; total, one hundred and forty-six. <sup>Present number.</sup>

The number of admissions during several years past, has increased a few every year, and the year just now closed has not been an exception. Ninety-seven were admitted last year, and one hundred and six this year; the whole number under treatment last year was two hundred and twenty-three, and this year, two hundred and forty. The number of admissions, therefore, amounts to more than forty-four per cent. of the whole number under <sup>Admissions.</sup>

care and treatment, and corresponds with our past experience in this respect.

Proportion of  
admissions to  
average num-  
ber.

I believe there are few, if any, institutions in the country, in which the admissions are so large in proportion to the capacity. The daily average number present was one hundred and thirty-five, while we had one hundred and six new patients. This, of course, indicates a rapid change of population, and it will be noticed that no less than thirty-two have been discharged whose condition at the time is reported as stationary; several of them before time enough had elapsed for any improvement, while in other cases, the nature of the disease indicated that improvement was improbable. In fact, in nearly half of those admitted, the disease had existed longer than one year, and there was little expectation of recovery, from the first. Many others were past sixty years of age, and several others still were affected with organic disease of the brain or nervous system; so that the number admitted of whom there was a reasonable prospect of recovery, has been quite small.

General  
paralysis.

Five were affected with general paralysis; a larger per cent. of the admissions than during any year since my connection with the Retreat, though smaller than in some other American institutions, and much smaller than in most English ones. In my opinion the general tendencies of the present condition of civilization in this country, especially in the larger towns and cities, are such that this particular form of disease, and indeed, diseases of the nervous system in general, are likely to increase rather than diminish. What may be called *fast living* in some form or other, and living in cities, is far more general than it was thirty years ago. It may be remarked that authorities are not altogether agreed as to all the factors which enter into the causation of general paralysis. It is

said not to exist in Ireland among the native population, while on the neighboring island of Great Britain, among both the English and Scotch, it prevails to a larger extent than in either this country or some other European countries. It does not exist among Indians, and is rarely known to affect colored people. Both the English and Scotch, as a whole, are, and always have been, better housed and better fed than the corresponding classes of the Irish; so that, so far as deficiency or quality of food may be an exciting cause, it has not existed. Nor have the Irish people been especially distinguished for temperate habits, above those existing among the inhabitants of the other island. But Ireland has never had many large cities; nor have large numbers of the people been employed in mills, factories, and manufacturing establishments. They are essentially a farming population, both men and women, and therefore pass a large portion of time in the open air. Under such a mode of life, alcohol is much more rapidly eliminated from the system, and its effects much less in causing degeneration of nervous tissue. Persons spending nearly all their lives at labor in large factories and coal mines, which are often illy ventilated, and in which the atmosphere is generally loaded with the impurities arising from a large number of laborers, as also from the gases and materials used for manufacture, are at large disadvantage in eliminating the products of degenerating tissue from their systems; and they are surrounded by unhealthy conditions of life to a much larger extent than a rural population.

Again, a rural population is little given to those excesses, both as to habits and labor, which exist among a city population. The brain, when nourished and sustained by blood from which the effete elements of the system have been fully eliminated, has much less inclination

towards a morbid craving for excitements and indulgences. They, also, are largely free from those anxieties and uncertainties which attend many avocations in city life, and which have a special tendency to exhaust the vitality of the central nervous system. These considerations may serve to indicate, in some degree, at least, why this disease appears to be increasing in this country, and why it exists so much more frequently in some countries than in others.

Number of admissions and number of persons admitted.

The number of admissions has been larger by two, than the number of persons admitted; two persons having been removed before recovery, and returned before the expiration of the year. As these persons had not recovered when they left, they might have been recorded as out on parole; but as it was uncertain whether they would be returned by their friends to the Retreat, or to some other institution, they were recorded as discharged on the books, and when returned, were considered as re-admissions.

Number of attacks, and civil conditions.

Thirteen persons had had one previous attack; six had had two; four had had three, one four, and six several.

Forty-two were single persons, forty-eight married, fifteen widowed, and one divorced.

Senile Insanity.

Four were under twenty years of age, and twenty two were above sixty, that is, more than twenty per cent. of all admissions. I believe such a large per cent. of admissions among elderly persons has never before occurred during any year of the history of the Retreat. From 1850 to 1854, inclusive, the per cent. of admissions above sixty years, was only .04+. From 1855 to 1859, inclusive, it was only .05+. During the year 1861 it was only .06+. In 1875 it was ten per cent. and in the quinquennial from 1875 to 1879 it was .12+, and only a trifle less during the ten years from 1875 to 1884, inclusive.



While our history during the past year has been so exceptional as to be of little value as indicating anything of a permanent character on this point, yet our history during the last ten years may do so. The percentage of admissions of persons above sixty years, during the last ten years, has considerably more than doubled, as compared with that of the ten years from 1850 to 1860 or any earlier decade. This large increase of admissions among elderly persons may be due to any one or more of several causes. It may possibly indicate that more old people become insane than formerly. Or it may be due to the fact that friends and relatives are at the present time less tolerant of the eccentricities and peculiarities of persons affected by a decay of their mental faculties; or, again, it may arise from the fact, that owing to the increase of longevity during the last twenty or thirty years, there exist in communities a larger number of persons relatively to the whole population, who are past sixty years, from which to recruit members as candidates for asylums. Possibly it may be due to an exceptional experience in this institution, as compared with that of other similar ones.

From an examination of the reports of several others, however, I am inclined to the opinion that our experience is not specially exceptional, unless it be during the last year; but on the contrary agrees with others in this respect.

In so far as there is an increase of proportion of elderly persons among the population, of course we should expect an increase in the numbers of such persons in asylums; but this cannot exist to any such extent as to adequately explain the total increase of numbers of such persons, and may be passed as of little importance.

I am of the opinion that there exist more cases of insanity among the population in proportion to its numbers,



than ever before, especially with the young and middle-aged. The conditions of living, especially among the poor, together with the advent of so large a foreign element, which is placed at a great disadvantage in the contests of life by reason of both poverty and ignorance, are sufficient to explain why this should be so; and these same causes, while less potent among the aged, yet doubtless have an influence to a greater or less extent. What may be termed the moral causes of insanity, are probably much less potent in old, than in middle age. The brain is less sensitive to the annoyances and irritations arising from the friction of every-day experiences; impressions of all kinds are less enduring, and persons have generally learned from the experiences of life to accept disappointments as largely the lot of mankind. For these reasons we should expect a less number of attacks of acute insanity among the old than the young. On the other hand, the physiological conditions of the system and especially the brain, are such as to render insanity of a certain kind, *i. e.*, dementia, or decay of the mental faculties, especially liable to occur. The brain, while generally the last organ to grow old in the general economy of the system, yet must do so at last. The diminution of sensitiveness is due to conditions which become pathological. The capillary network of vessels which supply the nerve-cells of the cortical portion of the brain, become diseased through a thickening of their coats. The circulation of the blood upon which these nerve-cells depend for their physiological activity, becomes impeded and irregular. The blood is not returned from the brain to the lungs so freely and regularly, for the purposes of oxygenation, and the effete products are not so thoroughly removed. Hence, what at first was a consequence of imperfect action, becomes a cause of greater imperfection of activity, which is mani-

fested by the mind, in some cases not only by diminution of function, but by impairment of perception, and the various processes of thought. The mind takes cognizance of the external world and the various interests and affairs of society, with less accuracy and readiness, and in consequence, the faculty we call judgment is impaired, and the person is certain to make mistakes, especially in reference to property and business. The delicacy of relations towards others is not so fully realized and appreciated, and hence the increase of friction arising from relations towards the younger members of family life; and again, the pathological changes above referred to in certain arrears of the brain sometimes tend to produce an increase of function in other limited sections. This frequently leads to exhilarated feeling, with an over-weening degree of confidence, and the individual is perfectly sure he was never more able to undertake and prosecute new or large enterprises in his life; he is sure he understands how he can easily double his fortune, conduct successfully the affairs of a new family, or wend his way without difficulty through the tangled web of political life, if he can only succeed in securing an opportunity of doing so.

Such persons become exceedingly difficult to live with, long before the disease has proceeded so far as to be manifested by well-marked delusions or hallucinations. Formerly the friends and relatives were accustomed to submit to these annoyances, and regard them as inseparable from age; and such persons were not removed to institutions unless the mind became fully deranged. But at the present time, in consequence of the improved conditions and accommodations of asylums, and greater public confidence in and appreciation of them, there exists a tendency to remove such members of families to asylums, to a much larger extent than formerly. People are also less

tolerant of these abnormal eccentricities, and less willing to suffer the annoyances, especially as there exists less necessity for their doing so. These considerations may explain the presence of so much larger numbers of elderly persons in asylums, than was formerly the case.

**Cases of mania.** There have been twenty-six cases of acute mania; that is, that number of which the disease was reported not to have existed longer than twelve months. This was the testimony of friends, but I have no doubt that in several of them it had been in existence for a longer period. The beginnings of mental disease are generally so insidious, and the first indications so slight, that the friends who are never expecting its occurrence are consequently unreliable

**Excitement.** in this respect. Not many of these cases have been greatly excited at any time during their residence in the Retreat. Mr. Johnson, who had been connected with the Retreat during more than forty-five years at the time of his death, used to insist that insanity had become greatly modified during the last thirty or forty years; that such intensity and excitement and noise as used to be common, are far less so now; in fact, that we do not have genuine cases of maniacal excitement, noise, and shouting now-a-days. I used to endeavor to console him for the loss of these marvelous manifestations of disease, and the consequent evidence of the degenerating times into which his declining years had led him, by the assertion that there were more cases of insanity, even if they were of a less intense character than formerly. It is possible that the larger measure of liberty at present accorded to patients, and the improved conditions of asylums as compared with those of forty years ago, have some influence in modifying the manifestations of excitement in some cases. Acting upon this belief, it has been my purpose to surround all patients, whether much or little ill, with such conditions as will tend to in-

spire a feeling of being in a private house. It may be said that for a person in a profound melancholy or excitement, one place is as good as another: that it makes no difference whether the walls and ceilings are painted or unpainted—whether the room is cheerful or otherwise. I am of the opinion that it does make a difference, and hence I have the walls and ceilings of the living rooms for all classes of patients alike, as highly adorned with pictures and paint as is in good taste, or at least as we can afford. I believe this condition of surroundings has a reflex influence upon the mind and tends to soothe and comfort. Persons can no longer complain that though they were in cheerful and pleasant halls after they began to improve, yet, when most needing such surroundings, that is, when first separated from friends and home and placed among strangers, they were placed among the most unattractive conditions.

It is now some three years since the walls and ceilings of the fourth halls were painted, frescoed, and otherwise made as attractive as possible; and yet there has been almost no defacing of them. One or two of the female patients have scratched some of the doors with pins; and also two or three small places on the walls; but in general, all has been carefully preserved, and appears as well to-day as when first done. Indeed, these halls are as cheerful as any others, with the exception of nice furniture, and patients no longer have any occasion to complain that they were at first placed in cheerless and unattractive halls.

Patients, also, soon learn to appreciate such surroundings, and are much less tempted to injure them. Their self-respect is preserved, and they soon appreciate such kindnesses and attentions as may be bestowed. But to a person confined in rooms which are unattractive, cheerless, and unhomelike, often the largest manifestations of sympathy

Importance of  
pleasant sur-  
roundings.



thy pass unheeded. I would therefore say that every expenditure possible for adornment and rendering the Retreat an attractive, homelike place, should be made. Flowers, pictures, interesting books, and handsome furniture, rooms, and landscape, are most important aids to nature in her recuperative operations. While therefore not undervaluing medication in certain stages of the disease and conditions of the system, but on the contrary, believing most fully in it, yet I recommend large doses of the former mode of treatment. Insanity arises from so large a variety of causes, and exists in so diverse conditions of the system, that we need to lay under contribution every known agency likely to be of assistance in relieving it. I have sometimes thought that in our rebound from the old idea that insanity is a spiritual disease, and due to spiritual or moral causes, and that all remedies should be addressed to this element in human nature, there exists danger we shall land too far over on the other side. The psychical and physical are united by the closest of bonds; they act and react upon each other, and any system which ignores, or treats the one to the neglect or exclusion of the other, is radically faulty.

A case.

One of the most interesting as well as distressing cases under treatment during the past year, is that of a lady who is both deaf and dumb. She lost her hearing when a child, as one of the sequelæ of scarlet fever, and in consequence, her ability to speak. She was educated in the use of signs, and her mind became very quick in its perceptions and highly active. She read books and magazines with great eagerness and rapidity; conversed in the sign language with ease, and was in all respects a great favorite among her friends. When about forty years of age, she rather suddenly and without any assignable cause, became moody, despondent, and indisposed to talk as



usual. She soon gave indications of suspicion of even her sisters; would take but little food; lost flesh rapidly; slept but little, and in general was so changed as to lead her friends to place her under treatment at a private institution for the insane, where she remained several months prior to being removed to the Retreat. At that time she was greatly excited, feeble, thin in flesh, and sleeping but little. She was much troubled with hallucinations of hearing, and constantly engaged in endeavoring to reply to sounds or voices which, she appeared to think, were in the room or in the air above her head. Her condition of body and mind has changed very considerably at times since she has been a patient here. During some periods, and apparently when she is most troubled with hallucinations of hearing, she will take little or no food voluntarily; indicates that she thinks it is poisoned, or that persons are about in the air telling her not to eat. As these hallucinations appear to subside, she will resume eating voluntarily; begins to gain in flesh, is less excited, and will spend hours every day in looking over pictures in such books as we give her, and later on, she reads articles in magazines with apparent interest. This improvement continues for a few weeks or even months; she regains her strength so as to ride and walk daily, and generally seems pretty well; awakening an expectation of recovery, though I am never certain she is wholly free from hearing voices, and she certainly has never regained the natural tone and vigor of her mind. Then again, the hallucinations of hearing become aggravated, and they are frequently, especially of late, accompanied by illusions, if not hallucinations of sight, and she again refuses food, becomes thin in flesh, and goes through another excited period, such as I have described above. This has now occurred several times since she has been a patient in the Retreat; so that her

case in this respect might be considered one of *folie circulaire*. But the interesting point is, that she should now, after so many years, during which she has been buried from all sound of the external world, and indeed, is so now, be so greatly annoyed by hallucinations of hearing. These are generally caused by irritations or excitement in some manner, of the auditory nerve within the brain, or of a portion of the optic thalamus. These impressions are conveyed to the ego, and cause such sensations as ordinarily arise from vibrations of the atmosphere upon the tympanum. These sounds are interpreted by the ego usually as voices of persons, probably because it is accustomed more often to hear the human voice than other sounds, especially when at home or in the presence of others. But why it should be so in this case, is difficult to explain. The auditory nerve has been in a dormant condition more than thirty-five years. So long a period of inactivity we should expect would destroy its functional activity. This, however, has not been the case in this instance, but, on the contrary, it appears to be very active. At times when reclining with her eyes closed, she will start up, cross the room, and reply to some imaginary voice. She will then place her finger upon her ear, to show us that she hears, and then, after listening, reply again, thus continuing an imaginary conversation for some time. She evidently regards this hearing with great surprise, but appears to be unable to understand that it is not real. It would seem that there still slumbered in the personality a remembrance of the voices of childhood, and when the requisite conditions of the tissue of the auditory nerve are excited, the voices which she was accustomed to hear so many years ago, come reverberating back again. She becomes excited, sometimes pleased, but more often distressed; wonders, grieves, and mourns, until the system becomes profoundly

affected. After a while, the irritation of the nerve becomes less, and she begins to improve again.

I herewith introduce the usual table exhibiting the <sup>Forms of</sup> form of disease, so far as I could ascertain from both the <sup>disease.</sup> history and symptoms, presented in each case admitted during the year.

	Males.	Females.	Total.
Congenital Insanity, . . . . .	1	..	1
Epileptic " . . . . .	2	..	2
Insanity of Adolescence, . . . . .	..	4	4
Climacteric Insanity, . . . . .	6	10	16
Senile " . . . . .	4	2	6
Puerperal " . . . . .	..	3	3
Uterine " . . . . .	..	1	1
Hysterical " . . . . .	..	1	1
Insanity of Masturbation, . . . . .	4	..	4
Insanity from Brain Disease, . . . . .	2	..	2
Traumatic Insanity, . . . . .	4	1	5
Insanity of Alcoholism, . . . . .	10	..	10
Post-febrile Insanity, . . . . .	1	..	1
Insanity of General Paralysis, . . . . .	5	..	5
Idiopathic Insanity, . . . . .	10	7	17
Unknown, . . . . .	16	12	28
Total, . . . . .	65	41	106

There have been twenty-eight cases of recovery during <sup>Recoveries.</sup> the year; a percentage of .26+ on the whole number admitted, and of nearly .50 upon the number of acute cases. This is less than has occurred during any year since my connection with the Retreat, and is to be accounted for by the classes of persons admitted, as before explained. It is well understood that the percentage of recoveries must depend upon the conditions of persons admitted as to age, cause of disease, length of time it has continued, etc., etc.

There have been eighteen deaths during the year, a per- <sup>Deaths.</sup> centage of .7+ on the number under treatment. This is less than last year, and larger than during some former years. Ten, or more than half the whole number, were past sixty years of age; twelve died of organic disease and old age.

**Improvements.** There have been no very large improvements in process of accomplishment during the past year. The most important has been the painting of the exterior of the main building. This has been done in a very thorough manner, and there will be little required in this respect for some years to come. Indeed, I think we may congratulate ourselves that there is not likely to be for a considerable period any large expenditures required in the way of repairs or improvements in connection with the main buildings of the Retreat.

**Entertainments.** There has been the usual course of entertainments during the year. A larger number of persons have been employed, who make public reading and slight-of-hand performances a profession, than has been the case during some former years.

We are under special indebtedness to the following persons and parties who have aided us in providing entertainments during the past year:

Mr. Palmer Tiffany, for a slight-of-hand performance.

Miss Lottie Leslie, for reading.

Mr. Henry T. Bryant, performances as ventriloquist.

Prof. B. M. Huxley, for readings.

G. H. Pray, for an evening of parlor magic.

S. T. Ford, for readings.

Joseph Blumenthal and wife, for a concert and musical entertainments.

E. N. Emmons, for musical entertainments.

Reading matter donated: *The Connecticut Courant*, *The Connecticut Register*, *The Columbian Register*, *The Philadelphia Telegraph*.

**Changes.**

The Honorable Calvin Day, who has been associated with the board of directors for more than thirty years, and during many years was vice-president, has died since my last report. Mr. Day was unable, during the last year

of his life, to visit the Retreat on account of feeble health; but he never lost his interest in the management of its affairs, and was always interested to hear of its welfare.

As a citizen who was always interested in the benevolent and religious interests of Connecticut and the country at large, he will be greatly missed.

Dr. Root, who has been second assistant physician during the year, has resumed general practice in the city, and his place is supplied by Dr. Wright, a graduate of the Yale Medical College.

It gives me pleasure to report that my associate officers have been faithful in the discharge of their duties, and that we have much reason for thankfulness that the year has passed with no cases of zymotic disease and no accidents.

H. P. STEARNS.

HARTFORD, March 31, 1885.



## REPORT OF THE CHAPLAIN OF THE RETREAT.

---

*To the Directors of the Retreat for the Insane :*

GENTLEMEN :—A review of my services at the Retreat for the past year recalls, with little variation, the experience of previous years. Attendance on daily prayers and Sabbath worship has been larger on the part of male patients than heretofore. From personal interviews with the inmates of the Retreat, one learns that some thought expressed in a hymn, prayer, or sermon has been remembered with satisfaction and profit. If no higher benefit is secured by a daily visit to the chapel than the interruption of a maniacal train of thought, even that may be hailed with gratitude as the sign of a healing process. In passing through our halls, a few years ago, I met an educated man whom I had long known and respected. His incoherent talk and dejected countenance pained me. At each subsequent interview, his malady seemed to hold remorseless sway over body and mind. The physicians had little hope of his recovery. Finding him one day in the deepest despondency, I repeated the stanza:

“Rock of ages cleft for me.”

Afterwards when he came to himself, he reminded me of that hymn as indissolubly linked with the beginning of his convalescence.

For sixty years your Retreat has maintained among institutions of the same class in this and other countries, the honorable distinction of providing for its inmates a daily religious service. Whatever the previous surroundings of the six thousand five hundred sufferers who have come to your institution for relief, they have here enjoyed the best medical treatment; and from Dr. Thomas Gallaudet and his successors, they have heard the “glad tidings of the Kingdom of God.” So may it be for generations to come!

Very respectfully and cordially yours,

WM. THOMPSON.

# APPENDIX.

## TABLE I.

MOVEMENT OF THE POPULATION.

	Male.	Female.	Total.
Number at the beginning of the year, -	68	66	134
Admitted in the year, - - -	54	36	90
Re-admitted in the year, - - -	11	5	16
Total admitted in the year, - - -	65	41	106
Total present in the year, - - -	133	107	240
Daily average for the year, - - -	69	66	135
Discharged — Recovered, - - -	17	11	28
Much improved, - - -		1	1
Improved, - - -	11	4	15
Stationary, - - -	17	15	32
Died, - - -	13	5	18
Total discharged in the year, - -	58	36	94
Remaining at the end of the year, -	75	71	146

## TABLE II.

NUMBER OF ATTACKS IN THOSE ADMITTED.

	WITHIN THE YEAR.			SINCE APRIL 1, 1845.		
	Male.	Female.	Total.	Male.	Female.	Total.
First, - - -	42	34	76	1,462	1,712	3,174
Second, - - -	10	3	13	329	464	793
Third, - - -	4	2	6	123	153	276
Fourth, - - -	3	1	4	49	88	137
Fifth, - - -	..	1	1	24	55	79
Sixth, - - -	..	..	..	21	30	51
Seventh, - - -	..	..	..	11	20	31
Eighth, - - -	..	..	..	6	11	17
Ninth, - - -	..	..	..	2	6	8
Tenth, - - -	..	..	..	2	2	4
Eleventh, - - -	..	..	..	1	1	2
Twelfth, - - -	..	..	..	1	2	3
More than twelve, - - -	..	..	..	..	7	7
Several, - - -	6	..	6	202	150	252
Unknown, - - -	..	..	..	123	115	238
Total, - - -	65	41	106	2,356	2,816	5,172

TABLE III.

NUMBER AT EACH AGE WHEN ADMITTED.

	WITHIN THE YEAR.			SINCE APRIL 1, 1844.		
	Male.	Female.	Total.	Male.	Female.	Total.
Under 15 years, -	..	..	..	15	11	26
15 to 20 " -	1	3	4	149	148	297
20 to 25 " -	6	4	10	308	353	661
25 to 30 " -	6	3	9	279	385	664
30 to 35 " -	3	5	8	298	371	669
35 to 40 " -	8	7	15	265	362	627
40 to 45 " -	9	5	14	254	320	574
45 to 50 " -	4	4	8	197	259	456
50 to 60 " -	9	7	16	333	387	720
60 to 70 " -	15	2	17	199	192	391
70 to 80 " -	4	1	5	94	49	143
Over 80 " -	..	..	..	11	9	20
Unknown, -	..	..	..	12	17	29
Total, - -	65	41	106	2,414	2,863	5,277

TABLE IV.

DURATION OF INSANITY BEFORE ENTRANCE OF THOSE ADMITTED.

	WITHIN THE YEAR.			SINCE APRIL 1, 1844.		
	Male.	Female.	Total.	Male.	Female.	Total.
Less than 1 month,	8	12	20	538	703	1,241
1 to 3 months, -	12	5	17	468	601	1,069
3 to 6 " -	8	4	12	317	375	692
6 to 9 " -	4	3	7	167	189	356
9 to 12 " -	3	1	4	99	91	190
12 to 18 " -	3	1	4	133	157	290
18 to 24 " -	2	2	4	88	64	152
2 to 3 years,	7	6	13	150	164	314
3 to 5 " -	6	1	7	126	144	270
5 to 10 " -	7	5	12	136	145	281
10 to 15 " -	3	1	4	47	57	104
15 to 20 " -	..	..	..	40	48	88
20 to 25 " -	2	..	2	19	28	47
25 to 30 " -	..	..	..	2	4	6
Over 30 " -	..	..	..	5	6	11
Unknown, -	..	..	..	77	85	162
Not Insane, -	..	..	..	2	2	4
Total, - -	65	41	106	2,414	2,863	5,277

TABLE V.

CIVIL CONDITION OF THOSE ADMITTED.

	WITHIN THE YEAR.			SINCE APRIL 1, 1843.		
	Male.	Female.	Total.	Male.	Female.	Total.
Single. - - -	26	16	42	1,232	1,216	2,448
Married, - - -	33	15	48	1,170	1,357	2,527
Widowed, - - -	6	9	15	143	380	523
Divorced, - - -	..	1	1	7	12	19
Unknown, - - -	..	..	..	3	7	10
Total, - - -	65	41	106	2,555	2,972	5,527

TABLE VI.

FORM OF DISEASE IN THOSE ADMITTED.

	WITHIN THE YEAR.			SINCE APRIL 1, 1869.		
	Male.	Female.	Total.	Male.	Female.	Total.
Mania Acute, -	15	11	26	219	202	421
“ Chronic, -	7	10	17	115	175	290
“ Epileptic, -	..	..	..	17	7	24
“ Puerperal, -	..	4	4	..	48	48
“ Suicidal, -	..	..	..	..	2	2
“ Homicidal, -	..	..	..	2	1	3
“ Periodical, -	5	1	6	30	37	67
Melancholia Acute, -	7	7	14	138	139	277
“ Chronic, -	4	4	8	63	76	139
“ Attonita, -	..	..	..	..	4	4
General Paresis, -	5	..	5	38	4	42
Dementia Acute, -	3	3	6	13	11	24
“ Chronic, -	11	1	12	37	23	60
“ Senile, -	3	..	3	28	8	36
Imbecility, -	..	..	..	6	..	6
Moral Insanity, -	..	..	..	6	3	9
Methomania, -	5	..	5	93	20	113
Folie Circulaire, -	..	..	..	2	1	3
Not Insane, -	..	..	..	3	3	6
Unknown, -	..	..	..	2	1	3
Total, - - -	65	41	106	812	765	1,577

TABLE VII.

DEATHS AND THE CAUSES.

	WITHIN THE YEAR.			SINCE APRIL 1, 1869.		
	Male.	Female.	Total.	Male.	Female.	Total.
Accident, - -	..	..	..	1	..	1
Apoplexy, - -	..	..	..	5	9	14
Abscess, - -	..	..	..	..	1	1
Brain Disease, Organic, - -	5	..	5	21	8	29
Bright's Disease, -	..	..	..	2	1	3
Cancer, - -	..	..	..	..	1	1
General Paresis, -	1	..	1	30	3	33
Heart Disease, -	1	1	2	3	2	5
Acute Mania Exhaustion, - -	..	..	..	17	18	35
Chronic Mania Exhaustion, - -	..	2	2	14	19	33
Inanition, - -	..	..	..	2	2	4
Intussusception, -	1	..	1	1	..	1
Melancholia and Exhaustion, -	2	..	2	5	3	8
Meningitis, - -	1	..	1	3	1	4
Paralysis, - -	..	..	..	3	6	9
Phthisis, - -	1	1	2	3	7	10
Pneumonia, - -	..	..	..	..	1	1
Puerperal Mania, -	..	1	1	..	7	7
Prostatitis, - -	..	..	..	1	..	1
Rheumatism, - -	..	..	..	1	..	1
Septicæmia, - -	..	..	..	1	..	1
Senile Decay, - -	1	..	1	24	10	34
Suicide, - -	..	..	..	6	3	9
Typhoid Fever, -	..	..	..	1	..	1
Typho Malarial Fever, - -	..	..	..	1	..	1
Typhomania, - -	..	..	..	1	2	3
Uræmia, - -	..	..	..	1	..	1
Undetermined, -	..	..	..	..	2	2
Total, - -	13	5	18	147	106	253



TABLE VIII.  
AGES AT DEATH.

	WITHIN THE YEAR.			SINCE APRIL 1, 1869.		
	Male.	Female.	Total.	Male.	Female.	Total.
Under 15 years, -	..	..	..	..	..	..
15 to 20 years, -	..	..	..	1	1	2
20 to 25 " -	..	1	1	3	4	7
25 to 30 " -	1	..	1	9	8	17
30 to 35 " -	1	..	1	10	8	18
35 to 40 " -	..	..	..	12	11	23
40 to 45 " -	4	1	5	19	9	28
45 to 50 " -	..	..	..	14	13	27
50 to 60 " -	..	..	..	26	21	47
60 to 70 " -	5	2	7	24	16	40
70 to 80 " -	2	1	3	25	13	38
Over 80 " -	..	..	..	4	2	6
Unknown, -	..	..	..	..	..	..
Total, - -	13	5	18	147	106	253

TABLE IX.

OPERATIONS OF THE HOSPITAL FROM THE BEGINNING IN EACH YEAR.

YEAR.	ADMITTED.			DISCHARGED.												Daily Average Number.	
				Recovered.			Improved.			Stationary.			Died.				
	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.	M.	F.	Tot.		Total.
1824-5			44			10											1
1825-6			33			16											1
1826-7			37			24											0
1827-8			40			27											4
1828-9			42			26											2
1829-30			51			28											0
1830-1			53			32											1
1831-2			80			46											6
1832-3			68			37											4
1833-4			72			43											3
1834-5			72			36											6
1835-6			73			42											6
1836-7			91			55											6
1837-8			67			42											10
1838-9			94			49											8
1839-40			84			50											2
1840-1			67			38											9
Total.									231			92					
1841-2	45	51	96	27	29	56	6	10	16	6	3	9	6	2	8		
1842-3	50	33	83	26	19	45	11	13	24				4	3	7		
1843-4	51	29	80	26	18	44	26	17	33				5	4	9		84
1844-5	56	49	105	23	22	45	13	7	20	7	2	9	7	4	11		97
1845-6	56	72	128	24	36	55	17	15	32	9	3	12	5	11	16		121
1846-7	50	61	111	16	40	56	22	13	35	1	6	7	8	3	11		127
1847-8	39	54	93	12	28	40	13	11	24	7	6	13	4	8	12		127
1848-9	49	84	133	20	50	70	8	15	23	12	5	17	7	5	12		141
1849-50	60	75	135	17	47	64	11	13	24	3	4	7	17	13	30		143
1850-1	56	72	128	25	34	59	15	11	26	8	6	14	9	6	15		151
1851-2	68	90	158	26	42	68	10	12	22	7	15	22	9	13	22		168
1852-3	66	74	140	32	32	64	18	22	40	13	13	26	10	11	21		179
1853-4	74	103	177	22	42	64	16	26	42	14	19	33	13	9	22		180
1854-5	69	100	169	26	47	73	20	18	38	18	16	34	9	8	17		185
1855-6	70	87	157	18	41	59	17	28	45	10	13	23	12	14	26		187
1856-7	73	88	161	34	37	71	19	26	45	14	8	22	5	9	14		204
1857-8	67	77	144	16	32	48	22	15	37	20	22	42	6	9	15		199
1858-9	63	78	141	25	36	61	11	23	34	17	12	29	7	3	10		216
1859-60	80	88	168	34	36	70	22	15	37	11	18	29	9	11	20		219
1860-1	65	98	163	28	47	75	17	37	54	16	11	27	5	4	9		225
1861-2	79	92	171	29	42	71	32	28	60	15	13	28	7	10	17		222
1862-3	79	91	170	32	40	72	20	25	45	6	9	15	14	14	28		222
1863-4	60	83	143	26	46	72	15	22	37	3	10	13	11	10	21		228
1864-5	74	81	155	27	30	57	21	24	45	11	8	19	13	14	27		235
1865-6	69	96	165	20	42	62	17	31	48	14	8	22	12	14	26		233
1866-7	67	115	182	29	61	90	21	26	47	10	11	21	15	14	29		238
1867-8	72	101	173	30	42	72	23	41	64	7	7	14	6	11	17		241
1868-9	39	90	129	15	45	60	25	43	68	46	49	95	7	10	17		188
1869-70	62	61	123	18	23	41	21	26	47	9	2	11	14	11	25		137
1870-1	63	80	143	16	30	46	22	17	39	9	5	14	9	12	21		151
1871-2	58	57	115	30	26	56	24	20	44	5	5	10	9	15	24		147
1872-3	61	53	114	24	21	45	11	19	30	10	9	19	8	2	10		143
1873-4	54	29	83	18	13	31	22	19	41	14	13	27	6	5	11		132
1874-5	31	47	78	22	9	31	8	4	12	9	5	14	8	4	12		124
1875-6	42	61	103	19	23	42	4	15	19	4	19	23	0	9	9		133
1876-7	45	47	92	16	17	33	12	11	23	10	17	27	9	2	11		137
1877-8	41	48	89	17	17	34	5	15	20	14	12	26	9	6	15		131
1878-9	33	45	78	9	16	25	6	7	13	7	13	20	12	6	18		130
1879-80	66	34	100	23	10	33	9	7	16	12	13	25	13	4	17		133
1880-1	60	54	114	18	18	36	6	11	17	22	17	39	16	7	23		144
1881-2	37	27	64	15	15	30	9	8	17	16	9	25	5	7	12		126
1882-3	35	43	78	18	8	26	7	10	17	6	16	22	4	5	9		124
1883-4	60	37	97	20	17	37	4	6	10	14	10	24	12	6	18		133
1884-5	65	41	106	17	11	28	11	5	16	17	15	32	13	5	18		135

# ADMISSION OF PATIENTS

## INTO THE

### RETREAT FOR THE INSANE AT HARTFORD.

---

No patient admitted for a shorter time than three months: and payment for *that term only* is to be made *in advance to the Steward or Treasurer*.

Subsequent expenses are to be paid quarterly to the *Steward*.

If the patient is removed *uncured* before the expiration of thirteen weeks, and contrary to the advice and consent of the Superintending Physician, board is always required for that period; but if the patient recovers before the expiration of the period paid for, or leaves with the full approbation of the physician, the excess is refunded.

Letters relating to the quarterly bills and clothing should be addressed to Rev. G. E. SANBORNE, the Steward. Clothing and packages sent for the use of the inmates should be sent to the care of the Steward.

All letters in relation to the situation and health of the patients, etc., will, of course, be addressed to Dr. HENRY P. STEARNS, the Superintendent.

Application for admission should be made to Dr. Stearns, Superintendent, *previous to the patient's being brought to the Retreat*, in all cases. A brief statement of the case should accompany the application.

---

[*Extracts from the Law passed at the (1869) Session of the Legislature.*]

"SECTION 1. Any lunatic or distracted person may be placed in a hospital, asylum, or retreat for the insane, or other suitable place of detention, either public or private, by his or her legal guardian, or relative, or friends in case of no guardian; but in no case without the certificate of one or more reputable physicians, after a personal examination made within one week of the date thereof, which certificate shall be duly acknowledged before some magistrate or other officer authorized to administer oaths or to take acknowledgment of deeds in the State where given, who shall certify to the genuineness of the signature, and to the respectability of the signer.

*Form of Certificate and Request, which the friends and patients are requested to present with the application for admission.*

### REQUEST FOR ADMISSION.

(To be signed by a guardian, near relative, or a friend.)

I request that M———, of ————, may be admitted as a patient into the Retreat for the Insane.

———, 188 .

### CERTIFICATE OF PHYSICIAN.

I hereby certify that I have, within one week of this date, made personal examination of M———, of ————, and believe h—to be insane.

———, 188 .

Subscribed, sworn to, and duly acknowledged by the said ———— before the subscribing authority ————, of ————, and I do hereby certify that the subscriber to the above certificate is a respectable physician, and his signature above is genuine.

———, 188 .

### FORM OF BOND.

Upon the admission of ————, of ————, into the RETREAT FOR THE INSANE, at Hartford, I engage to provide or pay for a sufficiency of clothing for ———— use, and to pay to the Treasurer of the said Institution ———— dollars per week for board, medicine, and medical attendance, and also to pay the expense of a separate attendant, if the Superintendent shall deem one necessary; to make compensation for all damage done by ———— to the property of the Retreat; to pay reasonable expenses for pursuing in case of elopement; cause the said patient to be removed when discharged; and, in event of death, to pay the expenses of burial.

———, *Principal.*

For the value received, I hereby engage to be responsible for the fulfillment of the above s<sup>t</sup> lations.

———, *Surety.*

HARTFORD, CONN., ———, 188 .  
Approved by ————

## FORM OF BEQUEST.

ITEM. I give and bequeath to the PRESIDENT AND DIRECTORS OF THE RETREAT FOR THE INSANE, in the city of Hartford, the sum of \_\_\_\_\_ dollars, to be paid by my executors out of my real and personal estate, as soon as the settlement of my affairs will permit, to the Treasurer of the said Institution, for the time being, in trust, to be applied by the Directors thereof to the humane purposes of said Institution.

---

## VISITORS.

The managers of the Institution, aware of the interest generally felt in its prosperity, which is naturally connected with a desire to visit its inmates and inspect its internal arrangements, are convinced that the welfare of the patients and the duties of its officers require that such visitations be subject to the following regulations:

I. The Institution will be open for visitors (Sundays excepted) from two to four o'clock in the afternoon.

II. All visitors, except persons having business at the Retreat, will be required to provide themselves with tickets for admission from the Managers or the Treasurer, either of whom will grant the same, unless their knowledge of circumstances make it, in their judgment, necessary to refuse.

## MANAGERS.

WM. R. CONE, Ætna Bank.

G. W. RUSSELL, 207 Farmington Avenue.

RODNEY DENNIS, Travelers Ins. Co.

## TREASURER.

THOMAS SISSON, 259 Main street.





NINETEENTH ANNUAL REPORT

OF THE

SHEFFIELD SCIENTIFIC SCHOOL

OF

YALE COLLEGE,

1884-85.

---

PRINTED BY ORDER OF THE GENERAL ASSEMBLY.

---

NEW HAVEN:

TUTTLE, MOREHOUSE & TAYLOR, PRINTERS.

1885.

# STATE BOARD OF VISITORS.

CONSTITUTING, WITH THE SECRETARY OF THE SCHOOL, THE BOARD FOR  
THE APPOINTMENT OF STATE STUDENTS.



## **Governor.**

HIS EXCELLENCY THOMAS M. WALLER, New London.

## **Lieutenant-Governor.**

HIS HONOR GEORGE G. SUMNER, Hartford.

## **State Senators.**

HON. LORIN A. COOKE, Barkhamsted.

HON. JOSEPH W. ALSOP, Middletown.

HON. EBENEZER C. DENNIS, Stafford.

## **Secretary of State Board of Education.**

CHARLES D. HINE.

## **Secretary and Treasurer of the School.**

GEORGE J. BRUSH.

# REPORT

OF THE

## STATE BOARD OF VISITORS.



*To the General Assembly of the State of Connecticut :*

The Governor, Lieutenant-Governor, three senior Senators and the Secretary of the Board of Education, comprise the State Board of Visitors of this institution.

These officials, with the Secretary of the school and the Secretary of the State Board of Education, have the selection of students to fill the State scholarships. This discretion is exercised in accordance with rules that experience has proven to be fair and impartial, and to best subserve the policy of the State in relation thereto.

The Governing Board of the School is appointed by the Yale College Corporation. Their nineteenth annual report, we have the honor of herewith presenting, is in every way gratifying. Its exhibit of the work this institution is doing, and the prosperity it is enjoying, is evidence of the ability and devotion of its managers, professors and teachers, and the growing appreciation in the country of the scientific, industrial and technical education, this school affords.

THOMAS M. WALLER,  
*Chairman.*





# ANNUAL STATEMENT

## OF THE

# GOVERNING BOARD.

---

THE SHEFFIELD SCIENTIFIC SCHOOL has on its rolls for the current academic year the largest number of names it has ever been able to report. Ten years ago the attendance was nearly as large. The business depression, however, which resulted from the financial crisis of 1873, made, in course of time, its consequences felt in this as in all institutions of learning whose courses of study are more or less intimately connected with the development of the industrial resources of the country. The number of students fell off gradually, so that in 1879 there were only 177 reported in attendance. From this time, however, the number began steadily to increase. In presenting to the Legislature, their Nineteenth Annual Report, it is gratifying for the Governing Board to be able to say that the highest point ever before reached has now been passed. It is the more gratifying for them to make the announcement, because they are able to say at the same time that the recovery from this temporary depression has not been due in the slightest to any lowering of the requirements for admission or for graduation. Nor has the establishment of several other institutions of a similar nature throughout the country interfered either with the growth of this School or limited the field from which it draws its support. The table on page 13 shows that its students come from no particular locality, and that while in one sense it is an institution of this State, it attracts men from all quarters of the Union.

## ADDITION TO THE CORPS OF PROFESSORS.

The unexpected and sudden death of Professor Norton at the beginning of the academic year 1883-4 was mentioned in the last Annual Report. The department of Civil Engineering was left, in consequence, without a head. By great good fortune the Governing Board were at once enabled to secure the services of capable and experienced instructors, and a temporary arrangement was also made by which Professor DuBois was put in charge of the departments of both Civil and Mechanical Engineering. This was intended to continue only until the end of the last academic year, and during the course of it a satisfactory arrangement was reached, which it is believed will be productive of great permanent benefit to the School. Professor DuBois was at his own request transferred from the department of Dynamic to that of Civil Engineering, the latter being the one to which he had originally devoted himself. This left the former vacant. To fill this position the Governing Board have been fortunate enough to secure the services of Mr. Charles B. Richards, one of the best-known mechanical engineers in the country. Mr. Richards' life has been largely spent in positions connected with the great manufacturing establishments of the United States. From 1869 to 1880 he was the Engineering Superintendent of the Colt's Patent Fire Arms Manufacturing Company at Hartford, and from 1880 to 1884 he held the place of Superintendent of the Southwark Foundry and Machine Company at Philadelphia. Learning of his willingness to accept a call to this institution, he was at once recommended by the Governing Board to the professorship of Dynamic Engineering, and to that position he was elected by the Corporation of the College at their meeting on February 19, 1884. He entered upon his duties at the beginning of the present academic year.

As Professor Lyman had signified his desire to be relieved of a certain portion of his duties, the chair of Physics and Astronomy was at his suggestion divided, and an independent professorship of Physics created. To this Mr. Charles S. Hastings was elected at the meeting of the Corporation above mentioned, Professor Lyman retaining the department of Astronomy. Mr. Hastings was a member of the class of 1870 in the Scientific School. After receiving his degree of Bachelor of Philosophy he pursued a course of graduate study in physics and astronomy, obtaining in

1873, from Yale College, the degree of Doctor of Philosophy. For the purpose of still further prosecuting his special studies, he went in 1873 to Europe, and spent two years in Germany and one in France. Returning to this country in 1875 he was made associate in Physics in Johns Hopkins University, and in 1882 was appointed associate Professor of Physics in the same institution. In 1883 he went to the Caroline Islands in charge of the spectroscopic observations of the eclipse of the sun which took place May 6, of that year, in the expedition sent out by the National Academy under Professor E. S. Holden. Resigning his professorship in Johns Hopkins University to accept the one established in this School, he likewise entered upon his duties at the beginning of the academic year.

#### ADDITION TO THE LABORATORY OF PHYSIOLOGICAL CHEMISTRY.

It has been found advisable during the past year to give additional space to the laboratory of Physiological Chemistry. Increasing numbers of students in the biological course has rendered this step necessary, especially as it has seemed desirable to provide suitable accommodations for advanced work in this department of chemistry. A larger number of graduate students than ever before are engaged in research and it is to be hoped that with the present increased laboratory facilities still larger numbers may enter upon a course of advanced study in this department, which promises so much to students preparing for the medical profession.

The necessary space for a new laboratory, in a building already crowded, was to be found only by dismantling a former recitation room adjoining the old laboratory. This, however, has given a commodious and well lighted work room, quite well adapted to the purposes for which it is intended. The new laboratory has accommodations for twelve students in addition to the common space which necessarily forms an integral part of a well equipped laboratory. The additional room thus acquired gives to the biological course better advantages for successful work, and renders possible a more thorough study of many physiological problems.

It may be of interest in this connection to state that there are now in South Sheffield Hall but two recitation rooms remaining.

One by one, as occasion has demanded, they have been converted into laboratories until now nearly the entire building is given up to the study of Chemistry in its various branches. This fact suggests that with increasing numbers of students in the School an additional building for chemistry will soon become an imperative necessity.

#### ADDITIONS TO THE DEPARTMENT OF PHYSICS.

The physical apparatus of the Sheffield Scientific School, though admirably adapted to the purposes of demonstration in the ordinary course of undergraduate lectures in most subjects, and even exceptionally rich in certain departments, was deficient in instruments for exact measurements, especially in the field of magnetism and electricity. To supply this defect the trustees appropriated a thousand dollars for the more immediate demands. This sum has been expended during the past year under the direction of the professor of physics. A large portion of the new apparatus was bought in Germany, but French manufacturers have contributed a part, and another portion has been designed by and constructed under the direction of the professor. This last course has been pursued only when satisfactory designs were lacking in the workshops of professional instrument-makers, or when the cost of such designs was excessive. It is believed that this plan and a fortuitously extensive acquaintance with the recent products of the leading instrument-makers of Europe, have rendered the purchases as economical as is consistent with perfect efficiency.

Among the more important additions may be named—

1. A reversible pendulum.
2. An electrical condenser for quantitative measurements, which can also be used for Volta's fundamental experiment.
3. A magnetometer.
4. An earth inductor.
5. A large universal galvanometer of a recent form, made by Hartmann, of Würzburg.
6. A Wheatstone's bridge of the Kohlrausch form, by the same maker.
7. Two sets of resistance coils from 0.01 to 10,000 ohms.
8. Reading telescope and scales.
9. A quadrant electrometer, by Dr. Söhrer & Son, of Leipsic.
10. An ammeter.



11. A magneto-electric machine of the Gramme form, by Breguet.

To these may be added a fine grating of about 45,000 lines on speculum metal, a gift to the institution from Professor Rowland, of the Johns Hopkins University; an accurate clock with electrical contact to make circuit every second, and, in process of construction, a grating spectroscope and a heliostat.

Besides the sum above named the School has devoted sufficient money to purchase and mount a dynamo machine and secondary battery of fifty cells. This machine, which is to provide electricity for all the laboratory and lecture-room experiments where strong currents are demanded, has already been ordered. It is to absorb two horse power of work. To drive it a four horse power engine is to be used which belongs to the department of Dynamical Engineering, the gift of Mr. Frank Bigelow. All of this last-mentioned apparatus will find a place in the room in the basement of the North Sheffield Hall which was formerly used by the Horological Bureau. The boiler which is to supply steam to the engine is also in part a gift from Messrs. Bigelow & Son, and is to be placed in the adjoining cellar near one of those used for heating the building.

#### GIFTS.

The last annual Report announced that Dr. Beverley Livingston, of the class of 1874, had left to the School at his death his valuable scientific collections, consisting of books, journals, microscopic slides, and cryptogamous plants. From the same source a further gift has since been received. Mr. Francis A. Livingston, the father of the deceased, has presented to the permanent fund of the institution three thousand dollars, which had been accumulated by his son. This disposition of his property was made in accordance with the owner's request.

From the clerk of the Probate Court of the Plainfield district, the Governing Board has received an attested copy of part of the will of the Hon. David Gallup. The clause relating to the Sheffield Scientific School reads as follows :

"I give, devise and bequeath to the President and Fellows of Yale College one-fifth part of my said estate, and direct my executors to distribute the same to them if they accept it, on the following conditions, viz.: Said property shall be invested in a



permanent fund to be known and called the David Gallup fund. The annual income of said fund shall be appropriated in paying the tuition of such young men residing in the State of Connecticut as shall be scholars in that department of said College known as the Sheffield Scientific School for a term of time not less than three months during the year, and who are not beneficiaries of the State in said department, and in case said income is not sufficient to pay the whole of said tuition, then it is to be apportioned to the payment of each scholar's tuition during the year whose attendance as a scholar in said school is in compliance with provisions herein expressed—as his attendance during said year bears to the whole attendance in said year under these provisions. And in case there shall be an excess in any year of the income of said fund over and above the tuition for the year, it shall be added to the principal of the fund until the principal is doubled, then any excess may be used for the benefit of said School."

In the last annual Report mention was also made of a gift of books to the library of the Scientific School by Professor Wolcott Gibbs, of Harvard University. The following is a catalogue of the works presented :

	No. Vols.
Smithsonian Reports for the years 1860, '70, '72, '76, '77 .....	5
Petermann's Geographische Mittheilungen, 1855, '56, '57, '58, '59, '60, '61, '62, '63, '64, and Ergänzungsband for 1860-'61, 1862-'63, 1863-'64.....	13
Proceedings of the American Philosophical Society, Nos. 73, 81, 82, 84, 86, 88, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 112.....	27
List of Members.....	3
Bulletins of the Department of the Interior: Report of Entomological Commission, Nos. 3 and 6 (2 vols.) .....	3
Bulletins of the Survey of the Territories, Vol. II., Nos. 1, 2, 4; Vol. III., Nos. 1, 2, 3; Vol. IV., Nos. 1, 2; Vol. V., Nos. 1 (2 vols.), 2 (2 vols.), 3, 4; Vol. VI., Nos. 1, 2, 3; Miscellaneous Publications, No. 1 (2 vols.); Series II., 1, 6, Extract (Gannett on Contour Map) .....	22
Wheeler, Survey West of 100th Meridian, Part VI., Vol. III.....	1
Wheeler, Annual Report on same, 1874, '75.....	2
Memoirs of the National Academy of Sciences.....	1
Gould, Catalogue of Stars, Extract from same .....	1
Annals of Harvard Observatory, Vol. IV., Part II.; Vols. VI., VII., IX., XI., Parts I., II. ....	6
Washington Astronomical Observations, 1868 .....	1
United States Naval Astronomical Expedition, 1849-'52, and Appendix....	2
Herschel, Astronomy .....	1
Desagerliers, A Course in Experimental Philosophy.....	3
Mousson, Physik.....	1

	No. Vols.
Buff, Experimental Physik .....	1
Ruggles, Report on International Monetary Conference, 1867 .....	1
——— Elements de Physique .....	2
Müller, Physik .....	1
Cooke, Chemical Physics .....	1
Miller, Elements of Chemistry .....	1
Löwig, Grundriss der Organischen Chemie .....	1
Knop, Chemische Methoden .....	1
Graham, Otto, Lehrbuch der Chemie .....	1
Limpricht, Lehrbuch der Organischen Chemie .....	1
Knapp, Lehrbuch der Chemischen Technologie .....	2
Physical Tracts .....	1
Technological Tracts .....	1
Chemical Tracts .....	4
Preisverzeichniss .....	1
Mohl, Mikrophographie .....	1
Brewster, Treatise on the Microscope .....	1
Bartlett, Optics and Acoustics .....	1
Bartlett, Analytical Mechanics .....	1
Schlömilch, Compendium der höheren Analyse .....	1
Hitchcock, Illustrations of Surface Geology .....	1
Indiana State Geological Report .....	1
Wetherill, Iron and Coal in Pennsylvania .....	1
Report of the Department of Agriculture, 1878 .....	1
Sugar and Hydrometers .....	1
Inaugural Dissertations .....	1
Hospital Steward's Manual .....	1
Mordecai, Military Commission of Europe .....	1
Delafield, Art of War in Europe .....	1

### ADDITIONS TO THE ZOOLOGICAL COLLECTIONS.

A. E. VERRILL, Curator.

The most important additions to the collections, as during several years past, have been due to the coöperation of the curator with the U. S. Fish Commission in the exploration of the deep sea off our coast. During the past summer the dredgings were carried on in the region of the Gulf Stream, from off Cape Hatteras to Cape Cod, and from shallow water to 2600 fathoms, by means of the steamer Albatross, Lieut. Z. L. Tanner commanding. The party was organized nearly as in 1883. Very large collections of Invertebrata were made, and the larger part were sent here for identification and description, as in previous years.

The curator has published during the year accounts of these and previous explorations in the American Journal of Science, in

the Annual Report of the Fish Commission, and in Science. He has also published a detailed descriptive Catalogue of the deep-sea Mollusca, illustrated by several plates, in the Transactions of the Connecticut Academy. In this paper about 125 species are added to the fauna, a large part of them new.

Professor S. I. Smith has taken charge of the Crustacea, and has published in the Annual Report of the Fish Commission a report on the Crustacea dredged by the Albatross in 1883, and a shorter paper on the same subject in the American Journal of Science.

Mr. J. H. Emerton has published a paper on the New England spiders of the family Epeiridæ in the Transactions of the Connecticut Academy, with eight plates. He has also completed, for the museum, the model of the great California *Octopus*.

Miss K. J. Bush has continued the work of cataloguing and labeling the collections of shells, etc., dredged by the Fish Commission. She has also prepared for publication a list of the deep-sea shells dredged by the Fish Hawk, 1880 to 1882, and another on the shallow water shells dredged near Cape Hatteras in 1883.

Miss C. E. Bush has also been employed by the Fish Commission to work on the collections of Invertebrates in the museum.

The fishes of the Gulf of Mexico and South America have been worked up and returned by Professor D. F. Jordan and Mr. C. H. Gilbert. The results have been published in the Proceedings of the National Museum.

In addition to the collections dredged by the U. S. Fish Commission the following have been received :

Professor W. G. Mixter. Frog with but three legs, Iowa.

Dr. Street, New Haven. Young alligator.

W. E. Safford, U. S. N. Shells from China, etc. Hydroids from California.

Augustus Fifer, New Haven. Flounder with both sides pale, New Haven.

Professor J. D. Dana. A young seal, mounted.

R. Wells & Co., New Haven. Sea-fans and a very large, rare sea-urchin (*Metalia pectoralis*) from Nassau ; and cuttlefishes from the Mediterranean.

A. H. Verrill, New Haven. An albino mole (*Scalops*) killed in Hamden by Mr. Warner. Nests of hornet, potter-wasp, etc.

Professor B. Silliman. A living lizard from Arizona.

H. S. Barnum. Skin of lynx from Turkey.

J. J. Rivers. Bryozoa from California.

G. J. Brush. Young bat, in alcohol.

A. E. Verrill. Insects from Virginia, myriapods from Luray Cave.

Chas. H. Townsend, New Haven. Sections of a pile from long wharf, New Haven, bored by an unusual species of teredo (*Xylotrya fimbriata*). Young oysters showing rates of growth.

John B. Russell, Stony Creek. Orange file-fish and sea cat-fish.

A. H. Young, New Haven. Young skunk, living, East Haven.

Horace Bowman, New Haven. Fish and parasites, New Haven.

### STATES REPRESENTED IN THE SCHOOL.

The following table shows the States from which come the students whose names appear on the catalogue during the current year, and the proportion of numbers that belong to each.

	Graduates.	Seniors.	Juniors.	Freshmen.	Special.	Total.
1. California .....	--	1	3	--	1	5
2. Colorado .....	1	--	2	2	--	5
3. Connecticut .....	13	24	24	27	4	92
4. Dakota Territory .....	--	--	--	1	--	1
5. District of Columbia ..	--	--	1	1	--	2
6. Georgia .....	--	--	2	--	--	2
7. Illinois .....	--	3	6	6	--	15
8. Indiana .....	--	1	--	2	--	3
9. Kentucky .....	--	2	1	2	--	5
10. Maine .....	--	2	1	1	--	4
11. Massachusetts .....	--	--	--	2	--	2
12. Michigan .....	--	1	2	1	--	4
13. Minnesota .....	--	--	4	1	--	5
14. Missouri .....	--	4	2	--	--	6
15. Nebraska .....	--	1	2	2	--	5
16. New Jersey .....	1	1	1	1	--	4
17. New York .....	4	18	9	19	2	52
18. Ohio .....	1	4	3	4	2	14
19. Oregon .....	--	1	--	--	--	1
20. Pennsylvania .....	--	6	4	7	--	17
21. Rhode Island .....	--	--	1	--	--	1
22. Texas .....	--	--	1	1	--	2
23. Vermont .....	--	--	1	--	--	1
24. Wisconsin .....	--	--	1	--	--	1
25. Saxony, Germany .....	--	--	--	1	--	1
Total .....	20	69	71	81	9	250

To a certain extent these statistics are deceptive. Connecticut has always a large number added to what belongs to it legiti-



mately, from the fact that families come here from other States and take up a temporary residence for the sake of educating their children. Graduate students also frequently change their residences to New Haven.

### PUBLIC LECTURES.

The annual course of lectures to mechanics and others has been given during the past year. The lectures and their subjects are indicated in the annexed programme :

- |  |                           |
|--|---------------------------|
| I. Tuesday, Feb. 26.—The Relation of Literature to Life. | Mr. Charles Dudley Warner |
| II. Thursday, " 28.—Sunflowers and Kindred Plants.       | Prof. Daniel C. Eaton     |
| III. Tuesday, March 4.—The Mormons and their Country.    | Prof. Brewer              |
| IV. Thursday, " 6.—The Mormons and their Country.        | Prof. Brewer              |
| V. Tuesday, " 11.—The Resources of Mexico.               | Mr. Alfred R. Conkling    |
| VI. Thursday, " 13.—The Railroad Problem.                | Mr. Arthur T. Hadley      |
| VII. Tuesday, " 18.—Muscles and Nerves.                  | Prof. Chittenden          |
| VIII. Thursday, " 20.—The Art of Seeing.                 | Prof. Niemeyer            |
| IX. Tuesday, " 25.—Science among the Arabians.           | Rev. Edward Hungerford    |
| X. Thursday, " 27.—Flying and Flying Machines.           | Mr. Thomas W. Mather      |
| XI. Tuesday, April 1.—Chemical Affinity.                 | Prof. Johnson             |
| XII. Thursday, " 3.—Earthquakes and Volcanoes.           | Prof. Verrill             |

### LECTURES ON MILITARY SCIENCE.

A course of Lectures on Military Science, by officers of the U. S. Engineering School at Willets Point, was delivered in North Sheffield Hall as a part of the instruction in the School during the second term of the academic year 1883-84.

The order and subjects of the Lectures were as follows :

- |  |   |
|--|---|
| I. Monday, Feb. 25.—Strategy and Grand Tactics.                  | 1st Lieut. James G. Warren, U. S. Engineers |
| II. Friday, " 29.—Logistics.                                     | 1st Lieut. James L. Lusk, U. S. Engineers   |
| III. Monday, March 3.—Small Arms and their Influence on Tactics. | 1st Lieut. Harry F. Hodges, U. S. Engineers |
| IV. Friday, " 7.—Artillery.                                      | 1st Lieut. John Biddle, U. S. Engineers     |
| V. Monday, " 10.—Fortification.                                  | Capt. J. H. Willard, U. S. Engineers        |
| VI. Friday, " 14.—Sea Coast Defense.                             | Gen. H. L. Abbot, U. S. Engineers           |



## ANNIVERSARY.

The Exercises of the Graduating Class were held in North Sheffield Hall on the evening of Tuesday, June 24, 1884. The candidates for degrees with the subjects of the graduation theses of the Bachelors of Philosophy are given in the following schedule. The names in the first list are of those who stood highest in their respective courses. Those marked with an asterisk read theses in the evening.

## DYNAMIC ENGINEER.

HERBERT WALDRON FAULKNER, *Stamford*. Steam Launch Calculations.

## BACHELORS OF PHILOSOPHY. (43.)

\*LAWRENCE VINCENT BENÉT (Civil Engineering), *Washington, D. C.* Review of the Michigan and New York Central Bridge over the Niagara River.

EDWARD BLAKE (Dynamic Engineering), *New Haven*. On the Prevention of Induction in Telephone Wires.

\*CHAUNCEY REA BURR (Select), *Portland, Me.* On the Irish Land Law of 1881.

HERBERT DEWITT CARRINGTON (Civil Engineering), *New Haven*. On the Theory of the Stone Arch.

LOUIS EDWARD COOPER (Biology), *Ansonia*. On the Kidney of the Cat.

\*GEORGE WYCKOFF CUMMINS (Biology), *Vienna, N. J.* On the Digestibility of Fish Flesh.

\*CHARLES PERCIVAL FARQUHAR (Dynamic Engineering), *York, Pa.* On the System of Rapid Transit in New York.

\*CALVIN LINSLEY HARRISON (Biology), *New Haven*. On the Exoskeleton of *Platyonichus ocellatus*.

\*EDWARD MUSSER HERR (Dynamic Engineering), *Denver, Col.* On the Block, and Interlocking Railroad Signals.

JAMES HENRY JENNINGS (Civil Engineering), *Redding*. On the Construction and Maintenance of Highways and Pavements.

\*ALBERT LUCAS (Chemistry), *Philadelphia, Pa.* On Eosin.

\*WILLIAM WALLACE NICHOLS (Dynamic Engineering), *Manitou Springs, Col.* On the Compound Engine with an original Design for a Compound Yacht Engine.

\*HERBERT LINCOLN NOYES (Chemistry), *New Haven*. On a Short Method of Separating a Small Amount of Zinc from a Large Excess of Iron.

\*WILLIAM TUTTLE SHEPARD (Civil Engineering), *Bristol*. On the Sinking of Foundations by the Use of Compressed Air.

JAMES HENRY WARNER (Select), *Steubenville, O.* On Methods of Conducting Presidential Elections.

ANDREW LINCOLN WINTON (Chemistry), *Bridgeport*. On the Chemical Composition of a Mineral from Fowler, N. Y.

- GUSTAVO ALFONSO (Chemistry), *New York City*. On the Separation of Zinc and Nickel.
- ELWOOD HARVEY ALLCUTT (Dynamic Engineering), *Kansas City, Mo.* On the Edison System of Incandescent Lighting.
- ALBERT PARK CAMPBELL (Dynamic Engineering), *New Haven*. On the Theory of the Giffard Injector.
- WILLIAM BRAINARD COIT (Select), *New London*. On the United States Weather Signal Service.
- CLIFFORD LAURENCE COLTON (Civil Engineering), *Canton*. Review of the Chapel Street Bridge over West River.
- ARTHUR BIXBY FERGUSON (Biology), *New Haven*. On the Nervous System of the Cat.
- DAVENPORT GALBRAITH (Select), *Erie, Pa.* On Criminal Procedure in the United States and France.
- MORGAN AUGUSTUS GUINNIP (Select), *Washington, D. C.* On the Silk Industry of the United States.
- JOHN BELL HATCHER (Natural History), *Cooper, Iowa*. On the Genus of Mosses termed *Conomitrium*.
- SAMUEL BROWN HAWLEY (Dynamic Engineering), *Yonkers, N. Y.* On Electric Lighting.
- HENRY CLAY JOHNSON (Dynamic Engineering), *Rome, Ga.* On the Westinghouse Automatic Engine.
- THOMAS CROSSLEY JOHNSON (Dynamic Engineering), *New Haven*. On the Manufacture of Iron and Steel.
- EDSON KEITH, JR. (Dynamic Engineering), *Chicago, Ill.* On the Telephone.
- DUANE JUDSON KELSEY (Dynamic Engineering), *Killingworth*. On the Transmission of Energy.
- LUTHER JAMES MARTIN (Biology), *Norwich*. On the Vertebral Column, the Shoulder and Pelvic Girdles of the Cat.
- GEORGE EDGAR MOULTHROP (Civil Engineering), *New Haven*. On the Niagara Falls Suspension Bridge.
- ALBERT ANDERSON NOYE (Dynamic Engineering), *Buffalo, N. Y.* On Roller Mills.
- JOSEPH POWELL, JR. (Civil Engineering), *Towanda, Pa.* On the Sewerage and Sewage Systems.
- JOSEPH WARREN ROGERS, JR. (Dynamic Engineering), *Scarborough, N. Y.* On the Theory of the Dynamo-Electric Engine.
- WALTER ALLEN SADD (Civil Engineering), *South Windsor*. On the Ventilation of Public Buildings.
- WILLIAM GODFREY SAGE (Dynamic Engineering), *Chicago, Ill.* On Hydraulic Elevators.
- RUSSELL SARGENT (Chemistry), *New Haven*. On the Incrustations of Boilers.
- CLARENCE WELLINGTON SHELDON (Biology), *Brooklyn, N. Y.* On the Skull of the Cat.
- JOHN PRENTICE TERRY (Dynamic Engineering), *Brooklyn, N. Y.* On Turbine Water Wheels.
- CHESTER THORNE (Civil Engineering), *Millbrook, N. Y.* On the Improved Main Drainage System of Boston.
- ELMORE ABRAM WILLETS (Select), *Belmont, N. Y.* On the Production of Crude Petroleum.

FRANKLIN ELDRED WORCESTER, A.B. (Dynamic Engineering), *Albany, N. Y.* On the Steam Indicator.

### PRIZES.

#### CLASS OF 1884.

- For excellence in *Civil Engineering*, the prize awarded to LAURENCE VINCENT BENÉT, *Washington, D. C.*
- For excellence in *Dynamic Engineering*, the prize awarded to EDWIN MUSSER HERR, *Denver, Col.*, with honorable mention of CHARLES PERCIVAL FARQUAR, *York, Pa.*, and WM. WALLACE NICHOLS, *Manitou Springs, Col.*
- For excellence in *German*, the prize divided between GEORGE WYCKOFF CUMMINS, *Vienna, N. J.*, and CHARLES PERCIVAL FARQUAR, *York, Pa.*

#### CLASS OF 1885.

- For excellence in the *Mathematics of Junior Year*, the prize divided between JAMES ALWARD SEYMOUR, *Auburn, N. Y.*, and FREDERICK BREWSTER WHEELER, *Monroe*, with honorable mention of ROBERT NEILL BRACE, *Dobbs Ferry, N. Y.*, JOHN VENABLE HANNA, *Kansas City, Mo.*, and LOUIS MILTON SCHMIDT, *New Britain.*

#### CLASS OF 1886.

- For excellence in *all the Studies of Freshmen Year*, the prize awarded to EMANUEL FRANK SELZ, *Chicago, Ill.*, with honorable mention of WILLIAM DAVID JOHNSON, *New Haven*, EDWIN FRANK MEYER, *Chicago, Ill.*, GEORGE EUSTIS POTTS, *Philadelphia, Pa.*, and WILLIAM SANDERS TEVIS, *San Francisco, Cal.*
- For excellence in *German*, the prize divided between EMANUEL FRANK SELZ and EDWIN FRANK MEYER, *Chicago, Ill.*
- For excellence in *Mathematics*, the prize divided between HARRIE SHELDON LEONARD, *Washington, D. C.*, and WILLIAM SANDERS TEVIS, *San Francisco, Cal.*
- For excellence in *Physics*, the prize awarded to THEODORE NEWTON CASE, *Hartford.*
- For excellence in *Chemistry*, the prize awarded to WILLIAM SANDERS TEVIS, *San Francisco, Cal.*
- For excellence in *Mechanical Drawing*, the prize awarded to FREDERICK WILLIAM DARLINGTON, *West Chester, Pa.*, with honorable mention of WILLIAM WALLACE ATTERBURY, *Detroit, Mich.*, and ROCKWELL AMASA WILLIAMS, *Canterbury.*
- For excellence in *English Composition*, 1st Prizes: HENRY WILLIAM BLAKE, *New Haven*; CALVERT TOWNLEY, *Cincinnati, O.* 2d Prizes: FREDERICK WILLIAM DARLINGTON, *West Chester, Pa.*; ALEXANDER HARRISON DAVIS, *Watertown*; WILLIS BENJAMIN HERR, *Denver, Col.* 3d Prizes: WILLIAM WALLACE ATTERBURY, *Detroit, Mich.*; WILLIAM WASHINGTON GORDON, *Savannah, Ga.*; WILLIAM DAVID JOHNSON, *New Haven*; HARRIE SHELDON LEONARD, *Washington, D. C.*; HENRY HAYES WADSWORTH, *Glencoe, Minn.*



---

---

PROGRAMME OF STUDIES

AND

CATALOGUE,

FOR THE COLLEGE YEAR, 1884-85.

---

---



# CALENDAR.

<b>1884.</b>		
18 Sept.	Thursday,	First Term begins.
22 Dec.	Monday,	First Term ends.
<b>1885.</b>		
6 Jan.	Tuesday,	<b>Winter Vacation of two weeks.</b> Second Term begins.
1 April,	Wednesday,	Spring Recess begins.
8 April,	Wednesday,	Spring Recess ends.
23 June,	Tuesday,	Meeting of Appointing Board.
23 June,	Tuesday,	Anniversary.
24 June,	Wednesday,	Commencement.
25, 26, 27 June }	Thursday, }	Examination for Admission.
	Friday, Sat., }	
<b>Summer Vacation of thirteen weeks.</b>		
22, 23 Sept.	Tues., Wedn.,	Examination for Admission.
24 Sept.	Thursday,	First Term begins.
24 Dec.	Thursday,	First Term ends.

## ABBREVIATIONS.

S. H.	-	-	-	-	-	-	Sheffield Hall.
N. S. H.	-	-	-	-	-	-	North Sheffield Hall.
TR.	-	-	-	-	-	-	Treasury Building.
D.	-	-	-	-	-	-	Durfee College.
F.	-	-	-	-	-	-	Farnam College.
E.	-	-	-	-	-	-	East Divinity Hall.
W.	-	-	-	-	-	-	West Divinity Hall.
P. M.	-	-	-	-	-	-	Peabody Museum.
A.	-	-	-	-	-	-	Absent on leave.

In the buildings belonging to the Sheffield Scientific School, the rooms numbered from 1 to 21 are in Sheffield Hall ; from 26 to 58 in North Sheffield Hall.

# CORPORATION.

---

## PRESIDENT.

REV. NOAH PORTER, D.D., LL.D.

## FELLOWS.

HIS EXCELLENCY THOMAS M. WALLER, M.A., NEW LONDON.  
HIS HONOR GEORGE G. SUMNER, HARTFORD.  
REV. THEODORE D. WOOLSEY, D.D., LL.D., NEW HAVEN.  
REV. GEORGE J. TILLOTSON, M.A., WETHERSFIELD.  
REV. MYRON N. MORRIS, M.A., WEST HARTFORD.  
HON. WILLIAM M. EVARTS, LL.D., NEW YORK CITY.  
CHIEF JUSTICE MORRISON R. WAITE, LL.D., WASHINGTON, D. C.  
REV. LAVALETTE PERRIN, D.D., TORRINGTON.  
REV. SAMUEL G. WILLARD, M.A., COLCHESTER.  
HON. HENRY B. HARRISON, M.A., NEW HAVEN.  
REV. JOSEPH W. BACKUS, M.A., PLAINVILLE.  
HON. FREDERICK J. KINGSBURY, M.A., WATERBURY.  
REV. NATHANIEL J. BURTON, D.D., HARTFORD.  
REV. JOSEPH ANDERSON, D.D., WATERBURY.  
REV. CHARLES RAY PALMER, M.A., BRIDGEPORT.  
REV. JOSEPH H. TWICHELL, B.A., HARTFORD.  
HON. WILLIAM WALTER PHELPS, M.A., NEW YORK CITY.  
THOMAS G. BENNETT, PH.B., NEW HAVEN.

---

## SECRETARY.

FRANKLIN B. DEXTER, M.A.

## TREASURER.

HENRY C. KINGSLEY, M.A.

(5 TR.) 23 Hillhouse av.



# GOVERNING BOARD.

APPOINTED BY THE CORPORATION OF YALE COLLEGE.

## President.

REV. NOAH PORTER, D.D., LL.D., (7 TR.) 31 Hillhouse av.

## Director.

GEORGE J. BRUSH, (3 S. H.) 14 Trumbull st.

## Professors.

ARRANGED IN THE ORDER OF THEIR GRADUATION.

CHESTER S. LYMAN,  
*Astronomy, Theoretical and Practical.* (39 N. S. H.) 88 Trumbull st.

WILLIAM D. WHITNEY,  
*Linguistics and French.* (205 D.) 227 Church st.

GEORGE J. BRUSH,  
*Mineralogy.* (3 S. H.) 14 Trumbull st.

SAMUEL W. JOHNSON,  
*Theoretical and Agricultural Chemistry.* (12 S. H.) 54 Trumbull st.

WILLIAM H. BREWER,  
*Agriculture* (NORTON Professor). (4 S. H.) 246 Orange st.

JOHN E. CLARK,  
*Mathematics.* (40 N. S. H.) 30 Trumbull st.

DANIEL C. EATON,  
*Botany.* (41 N. S. H.) 70 Sachem st.

CHARLES B. RICHARDS,  
*Dynamical Engineering* (HIGGIN Professor). (45 N. S. H.) 43 Elm st.

THOMAS R. LOUNSBURY,  
*English.* 22 Lincoln st.

OSCAR D. ALLEN,  
*Analytical Chemistry and Metallurgy.* (1 S. H.) 433 Temple st.

ADDISON E. VERRILL,  
*Zoölogy and Geology.* (15 P. M.) 86 Whalley av.

SYDNEY I. SMITH,  
*Comparative Anatomy.* (14 P. M.) 78 Whalley av.

WILLIAM G. MIXTER,  
*Chemistry.* (8 S. H.) 144 Edwards st.

A. JAY DUBOIS,  
*Civil Engineering.* (45 N. S. H.) 258 Bradley st.

CHARLES S. HASTINGS,  
*Physics.* (30 N. S. H.) 191 Bradley st.

HENRY W. FARNAM,  
*Political Economy and History.* 43 Hillhouse av.

RUSSELL H. CHITTENDEN,  
*Physiological Chemistry.* (5 S. H.) 32 Trumbull st.

# LECTURERS, INSTRUCTORS AND ASSISTANTS.

ADDITIONAL TO THE GOVERNING BOARD.

---

ALBERT S. WHEELER,	
<i>German.</i>	Tremont House.
WILLIAM I. KNAPP, Street Professor of Modern Languages,	
<i>French.</i>	(42 S. M.) 75 Whitney av.
MARK BAILEY,	
<i>Elocution.</i>	(150 F.) 200 Temple st.
JOHN H. NIEMEYER, Professor in Yale School of Fine Arts,	
<i>Free Hand Drawing.</i>	8 Art School.
FREDERICK R. HONEY,	
<i>Descriptive Geometry and Projection Drawing.</i>	(53 N. S. H.) 14 Lincoln st.
THOMAS W. MATHER.	
<i>Kinematics and Machine Design.</i>	(45 N. S. H.) 19 Warren pl.
SAMUEL L. PENFIELD,	
<i>Mineralogy.</i>	(2 P. M.) 14 S. H.
HORACE L. WELLS.	
<i>Analytical Chemistry.</i>	14 S. H.
SAMUEL E. BARNEY,	
<i>Civil Engineering.</i>	363 Elm st.
ALTON W. LEIGHTON,	
<i>Drawing.</i>	129 College st.
THOMAS B. OSBORNE,	
<i>Analytical Chemistry.</i>	260 Crown st.
LOUIS V. PIRSSON.	
<i>Analytical Chemistry.</i>	8 Prospect pl.
WILLIAM W. NICHOLS,	
<i>Mathematics.</i>	289 York st.

---

JANITOR OF SHEFFIELD HALL.

ANTON PFEIFER, 55 Lock street.

JANITOR OF NORTH SHEFFIELD HALL.

GEORGE W. STODDARD, 82 Mansfield street.



## GRADUATE STUDENTS.

Samuel Eben Barney, PH.B.,	<i>New Haven,</i>	283 Orange st.
John Bartholomew, PH.B.,	<i>Guilford,</i>	Guilford
Edward Blake, PH.B.,	<i>New Haven,</i>	361 Temple st.
Albert Park Campbell, PH.B.,	<i>New Haven,</i>	28 York sq.
Herbert DeWitt Carrington, PH.B.,	<i>New Haven,</i>	1169 Chapel st.
George Wyckoff Cummins, PH.B.,	<i>Vienna, N. J.,</i>	289 York st.
Arnold Guyot Dana, B.A.,	<i>New Haven,</i>	24 Hillhouse av.
Harry Holbrook Gladding, PH.B.,	<i>New Haven,</i>	170 Martin st.
George Herbert Graves, B.A.,	<i>New Haven,</i>	101 Grove st.
Duane Judson Kelsey, PH.B.,	<i>Killingworth,</i>	228 Crown st.
Alexander Lambert, B.A.,	<i>New York City,</i>	90 High st.
William Wallace Nichols, PH.B.,	<i>Manitou Springs, Col.,</i>	289 York st.
Thomas Burr Osborne, B.A.,	<i>New Haven,</i>	260 Crown st.
Harry McMahon Painter, B.A.,	<i>West Haven,</i>	4 E.
Louis Valentine Pirsson, PH.B.,	<i>New York City,</i>	8 Prospect pl.
William Edwin Safford, } Ensign U. S. Navy, }	<i>Chillicothe, O.,</i>	150 College st.
William Tuttle Shepard, PH.B.,	<i>Bristol,</i>	17 College st.
Herbert Eugene Smith, PH.B., } M.D. University of Pa. }	<i>New Haven,</i>	76 Howe st.
John Prentice Terry, PH.B.,	<i>Brooklyn, N. Y.,</i>	90 High st.
Franklin Eldred Worcester, B.A., PH.B.,	<i>New York City,</i>	72 W.

## SENIOR CLASS.

Arthur Bronson Adams,	<i>New Haven,</i>	120 St. John st.
Grenville French Allen,	<i>New Haven.</i>	433 Temple st.
Philip VanWyck Anderson,	<i>Sing Sing, N. Y.,</i>	68 w.
James Arthur Atwood,	<i>Wauvegan,</i>	43 College st.
John Frank Babcock,	<i>Elmira, N. Y.,</i>	36 Elm st.
Paul Daily Bernard,	<i>Brooklyn, N. Y.,</i>	68 w.
Clarence Blakeslee,	<i>New Haven,</i>	505 George st.
Robert Neill Brace,	<i>Dobbs Ferry, N. Y.,</i>	65 w.
Clarence Russell Britton,	<i>Cleveland, O.,</i>	36 Elm st.
Fred Spencer Bullene,	<i>Kansas City, Mo.,</i>	36 Elm st.
Richard Morton Bushnell,	<i>Saybrook,</i>	159 Orange st.
Merritt Mead Clark,	<i>Bedford, N. Y.,</i>	411 Temple st.
Wallace Sherman Clark,	<i>Brooklyn, N. Y.,</i>	380 George st.
Arthur Chandler Coates,	<i>Kansas City, Mo.,</i>	36 Elm st.
William Ledlie Culbert,	<i>Brooklyn, N. Y.,</i>	65 w.
John Joseph Flather,	<i>Bridgeport,</i>	295 York st.
William Holt Gale,	<i>New York City,</i>	58 w.
Irving Cook Gladwin,	<i>Sherburne, N. Y.,</i>	203 York st.
Jacob Philip Goodhart,	<i>New Haven,</i>	107 Court st.
Charles Lord Griffith,	<i>San Francisco, Cal.,</i>	36 Elm st.
John Venable Hanna,	<i>Kansas City, Mo.,</i>	380 George st.
John Ethan Hill,	<i>Mystic Bridge,</i>	84 Lafayette st.
David Leavitt Hough,	<i>Fort Wayne, Ind.,</i>	109 Elm st.
Percy Jackson,	<i>Belleville, N. J.,</i>	119 w.
Edwin Young Judd,	<i>Hartford,</i>	86 w.
Amos William Kimball,	<i>Portland, Oregon,</i>	43 College st.
Harry D. Kohn,	<i>Chicago, Ill.,</i>	57 w.
Ira Lamb,	<i>Franklin,</i>	159 Orange st.
Percy Lyford Lang,	<i>Waverly, N. Y.,</i>	43 College st.
William Heath Lyon, Jr.,	<i>Brooklyn, N. Y.,</i>	106 Wall st.
Charles Pond McAvoy,	<i>Chicago, Ill.,</i>	43 College st.
Charles Dickerman McCandliss,	<i>Philadelphia, Pa.,</i>	A.
William Adair McDowell,	<i>Lexington, Ky.,</i>	43 College st.
Daniel William Maher,	<i>New Haven.</i>	299 George st.
Daniel Delevan Mangam, Jr.,	<i>Sing Sing, N. Y.,</i>	43 College st.
William Edward Martin,	<i>Allentown, Pa.,</i>	395 Temple st.
Edward Alexander Meredith,	<i>Xenia, O.,</i>	389 Temple st.
Deane Miller,	<i>New Rochelle, N. Y.,</i>	36 Elm st.
Herbert Lincoln Mitchell,	<i>New Haven,</i>	51 Insurance Bld'g.
James Jacob Morgan,	<i>New Haven,</i>	470 Elm st.
William Alpheus Nettleton,	<i>Kansas City, Mo.,</i>	124 w.
Truman Handy Newbery,	<i>Detroit, Mich.,</i>	43 College st.
Isaac Norris, 3d,	<i>Philadelphia, Pa.,</i>	77 w.
George Washington Norton, Jr.,	<i>Louisville, Ky.,</i>	124 w.

Henry Oliver,	<i>Pittsburgh, Pa.,</i>	138 College st.
John Cunningham Oliver,	<i>Pittsburgh, Pa.,</i>	138 College st.
Abbott Chandler Page,	<i>Fair Haven,</i>	South Quinnipiac st.
Willis LaFayette Perkins,	<i>Portland, Me.,</i>	203 York st.
Royal Watson Pinney,	<i>Derby,</i>	395 Temple st.
Daniel Tuthill Pratt,	<i>Elmira, N. Y.,</i>	36 Elm st.
Sidney Armour Reeve,	<i>Dayton, O.,</i>	395 Temple st.
Willard Crawford Reid,	<i>Lakeville,</i>	74 High st.
John Rice,	<i>Pottstown, Pa.,</i>	43 College st.
William Todd Ross,	<i>Belfast, Me.,</i>	62 w.
Charles Gideon Rupert,	<i>New Haven,</i>	109 High st.
Frank Elbert Sands,	<i>New Haven,</i>	1173 Chapel st.
Louis Milton Schmidt,	<i>New Britain,</i>	395 Temple st.
James Alward Seymour,	<i>Auburn, N. Y.,</i>	36 Elm st.
Murray Shipley, Jr.,	<i>Cincinnati, O.,</i>	109 Elm st.
Joseph Godfrey Snyder,	<i>Chicago, Ill.,</i>	57 w.
Frank Jerome Stevens,	<i>New Haven,</i>	7 Wooster pl.
William VanSchoonhoven Thorne,	<i>New York City,</i>	66 w.
Henry Lee Townsend,	<i>New York City,</i>	71 w.
Curtiss Chauncey Turner,	<i>Omaha, Nebr.,</i>	393 Temple st.
George Elliot Verrill,	<i>New Haven,</i>	86 Whalley av.
Frederick Brewster Wheeler,	<i>Monroe,</i>	409 Temple st.
Henry Howard Whitehouse,	<i>Hartford,</i>	395 Temple st.
Edward Simpson Wilson,	<i>New York City,</i>	119 w.
Benjamin Elizur Wright,	<i>Cromwell,</i>	63 w.

## JUNIOR CLASS.

William Allender,	<i>New London,</i>	59 w.
Gilbert Lincoln Husted Arnold,	<i>Stamford,</i>	60 Lyon st.
William Wallace Atterbury,	<i>Detroit, Mich.,</i>	59 Prospect st.
Nathan Edward Ayer,	<i>Bangor, Me.,</i>	328 Temple st.
Silas Warren Bartlett,	<i>New Haven,</i>	389 Temple st.
Henry William Blake,	<i>New Haven,</i>	361 Temple st.
John Marvin Blakeley,	<i>St. Paul, Minn.,</i>	389 Temple st.
Howard Cone Bolton,	<i>Cleveland, O.,</i>	55 w.
Percival Ranney Bolton,	<i>Cleveland, O.,</i>	55 w.
Louis Whitford Bond,	<i>New York City,</i>	61 w.
Thomas Stoddard Bronson,	<i>New Haven,</i>	1460 Chapel st.
Harry Lockwood Burns,	<i>Milford,</i>	63 Prospect st.
Lewis Emerson Cadwell,	<i>New Haven,</i>	106 Liberty st.
Fred. Eaton Case,	<i>Detroit, Mich.,</i>	389 Temple st.
Theodore Newton Case,	<i>Hartford,</i>	287 York st.
John Chamberlain,	<i>Kansas City, Mo.,</i>	76 Mansfield st.
Frederick William Darlington,	<i>West Chester, Pa.,</i>	133 College st.
Alexander Harrison Davis,	<i>Watertown,</i>	289 York st.
John Edwin Doane,	<i>Chicago, Ill.,</i>	36 Elm st.
Joseph Osterman Dyer,	<i>Galveston, Tex.,</i>	31 Trumbull st.
Harvey Farrington,	<i>Croton, N. Y.,</i>	64 High st.
Joseph Essex Fitzsimons,	<i>Waterbury,</i>	509 Chapel st.
Robert Elder Forster,	<i>Harrisburg, Pa.,</i>	38 Elm st.
Frederick Abbot Goodwin,	<i>Rutland, Vt.,</i>	38 Elm st.
William Washington Gordon, 3d,	<i>Savannah, Ga.,</i>	64 High st.
James Eugene Greenebaum,	<i>Chicago, Ill.,</i>	38 High st.
Everett Mason Grimes,	<i>Oakland, Cal.,</i>	134 College st.
Harry Cloyd Hamill,	<i>Georgetown, Col.,</i>	287 York st.
David Neil Harper,	<i>Shippensburg, Pa.,</i>	12 Lincoln st.
Frank Sperry Harrison,	<i>New Haven,</i>	18 Warren st.
Willis Benjamin Herr,	<i>Denver, Col.,</i>	287 York st.
Jay Russell Hickox,	<i>South Britain,</i>	270 Martin st.
William Brisbane Hickox,	<i>Litchfield,</i>	64 w.
William Barlow Hill,	<i>Greenfield Hill,</i>	17 College st.
Abraham Lincoln Howes,	<i>Black Rock,</i>	389 Temple st.
Marvin D. Hubbell,	<i>New York City,</i>	113 College st.
William Evelyn Hutchings,	<i>Louisville, Ky.,</i>	43 College st.
Morison Thomas Hutchinson,	<i>Brooklyn, N. Y.,</i>	36 Elm st.
Abraham Lincoln Hyde,	<i>New Haven,</i>	179 Washington st.
William David Johnson,	<i>New Haven,</i>	92 Rosette st.
Thomas Coggeshall Knowles,	<i>San Francisco, Cal.,</i>	107 Wall st.
Harrie Sheldon Leonard,	<i>Washington, D. C.,</i>	18 Trumbull st.
Cornelius Fay Lynde,	<i>Rock Island, Ill.,</i>	90 Wall st.
Mahlon Henry Marlin,	<i>New Haven</i>	236 George st.

Frederick Anderson Marsh,	<i>Kansas City, Mo.,</i>	64 w.
Conrad Henry Matthiessen,	<i>Cornwall, N. Y.,</i>	36 Elm st.
Arthur Meeker,	<i>Chicago, Ill.,</i>	43 College st.
Edwin Frank Meyer,	<i>Chicago, Ill.,</i>	126 High st.
George Perkins Miller,	<i>Utica, N. Y.,</i>	60 w.
Henry White Patten,	<i>North Haven,</i>	119 Greene st.
George Eustis Potts,	<i>Philadelphia, Pa.,</i>	71 w.
James Frederick Prentiss,	<i>Watertown, Wisc.,</i>	36 Elm st.
William Acker Rice,	<i>St. Paul, Minn.,</i>	36 Elm st.
Arthur Jones Richmond,	<i>Providence, R. I.,</i>	43 Colloge st.
Samuel Bostwick Robbins,	<i>Lakeville,</i>	152 Grove st.
Reginald Ronalds,	<i>New York City,</i>	43 College st.
Alexander Holley Rudd,	<i>Lakeville,</i>	389 Temple st.
Henry Rustin,	<i>Omaha, Nebr.,</i>	159 York st.
Emanuel Frank Selz,	<i>Chicago, Ill.,</i>	126 High st.
Edwin Coupland Shaw,	<i>Buffalo, N. Y.,</i>	63 Prospect st.
William Sanders Tevis,	<i>San Francisco, Cal.,</i>	36 Elm st.
John Metcalfe Thomas,	<i>New York City,</i>	134 College st.
Calvert Townley,	<i>Cincinnati, O.,</i>	101 w.
George Pollok Devereux Townsend,	<i>Middletown,</i>	101 w.
Thomas Brodhead VanBuren, Jr.,	<i>Englewood, N. J.,</i>	43 College st.
Henry Hayes Wadsworth,	<i>Glencoe, Minn.,</i>	Allingtown
James Edward Warnock,	<i>Atlanta, Ga.,</i>	126 High st.
Charles Willcox,	<i>Omaha, Nebr.,</i>	163 Temple st.
Rockwell Amasa Williams,	<i>Canterbury,</i>	104 Wall st.
Willis Stoughton Williams,	<i>Minneapolis, Minn.,</i>	389 Temple st.
Robert McKnight Woods,	<i>New Haven,</i>	364 George st.



## FRESHMAN CLASS.

Henry Frederick Adams,	<i>Westport,</i>	53 Prospect st.
Robert Clayton Augur,	<i>West Haven.</i>	2d av., West Haven
Elmer Ellsworth Bennett,	<i>Plainfield,</i>	75 Wooster st.
Emerson Francis Bennett,	<i>Fueblo, Col.,</i>	347 York st.
Walter Pierpont Bigelow,	<i>New Haven,</i>	278 Orange st.
Herbert Spencer Bullard,	<i>Hartford,</i>	397 Temple st.
Lewis Alexander Burgess,	<i>Newark, N. J.,</i>	59 Prospect st.
William Harper Butler,	<i>Olean, N. Y.,</i>	64 High st.
George Alfred Caldwell,	<i>Louisville, Ky.,</i>	395 Temple st.
Richard Augustus Chapman,	<i>Rye, N. Y.,</i>	150 College st.
Harry Fitch Coleman,	<i>Logansport, Ind.,</i>	295 Temple st.
Lewis Atterbury Conner,	<i>New Albany, Ind.,</i>	59 Prospect st.
David Mark Cummings,	<i>Chicago, Ill.,</i>	391 Temple st.
Julius Gilbert Day,	<i>Seymour,</i>	205 Orange st.
William Greenhow Doane,	<i>Omaha, Nebr.,</i>	159 York st.
John Ambrose Doolittle,	<i>New Haven,</i>	219 Orange st.
Edward Warburton Durant,	<i>Stillwater, Minn.,</i>	86 Wall st.
Isadore Dyer, Jr.,	<i>Galveston, Tex.,</i>	65 Grove st.
Henry Hayes Ellis,	<i>Oxford, Me.,</i>	75 Wooster st.
Charles Francis Emerson,	<i>Titusville, Pa.,</i>	1079 Chapel st.
Arthur Mansfield Everit,	<i>New Haven,</i>	53 Prospect st.
Pedro Florentino Francke,	<i>New York City,</i>	109 Wall st.
Raymond Thomson French,	<i>Seymour,</i>	114 High st.
Charles Hunter Gardner,	<i>New Haven,</i>	75 Dixwell av.
Francis Frederic Georger,	<i>New York City,</i>	155 Elm st.
Robert Fisher Gibson,	<i>York, Pa.,</i>	8 Prospect pl.
Charles Joseph Goldmark,	<i>New York City,</i>	629 Chapel st.
Wilfred Elizur Griggs,	<i>Waterbury,</i>	189 York st.
George Conradt Ham,	<i>Washington Hollow, N. Y.,</i>	38 Elm st.
Harry Leon Hamlin,	<i>Chicago, Ill.,</i>	1179 Chapel st.
Edgar Burton Harger,	<i>Oxford,</i>	16 University pl.
William Lynde Harrison,	<i>New Haven,</i>	39 College st.
Herbert Leopold Hart,	<i>Chicago, Ill.,</i>	38 High st.
James Henry Hayden,	<i>New York City,</i>	55 Trumbull st.
Henry Allen Higley, Jr.,	<i>Brooklyn, N. Y.,</i>	238 York st.
Joseph Cooke Jackson, Jr.,	<i>New York City,</i>	113 College st.
Lawrence Bates Jenckes,	<i>Stamford,</i>	109 Elm st.
Leonard Abbot Jenkins,	<i>Dresden, Saxony,</i>	124 High st.
Charles Sherman Jewett,	<i>Buffalo, N. Y.,</i>	136 College st.
John Edwin Judson,	<i>New Haven,</i>	142 St. John st.
Frederick Sheffield Kellogg,	<i>Utica, N. Y.,</i>	55 Trumbull st.
Charles Foster Kent,	<i>Palmyra, N. Y.,</i>	364 George st.
Grayson Guthrie Knapp,	<i>Auburn, N. Y.,</i>	391 Temple st.
Charles Wilbur Knox,	<i>Pittsburgh, Pa.,</i>	155 Elm st.

John Stewart Kulp,	<i>Wilkesbarre, Pa.,</i>	242 York st.
Isaac Eugene Leonard,	<i>Chicago, Ill.,</i>	64 High st.
Edward Linsley Maltby,	<i>Northford,</i>	297 York st.
Harry Zeller Marshall,	<i>Dayton, O.,</i>	61 Grove st.
Harley James Morrison,	<i>Cincinnati, O.,</i>	129 College st.
Samuel Everett Oakes,	<i>Washington, D. C.,</i>	36 Elm st.
William Partridge Ordway,	<i>Boston, Mass.,</i>	155 Elm st.
Edward Horatio Parker,	<i>Detroit, Mich.,</i>	395 Temple st.
Franklin Treat Parlin,	<i>Casselton, Dakota,</i>	8 Prospect pl.
John Erskine Patrick,	<i>Omaha, Nebr.,</i>	159 York st.
David Walter Patten,	<i>North Haven,</i>	119 Greene st.
Edmund Bishop Patterson,	<i>Allegheny City, Pa.,</i>	381 Crown st.
Frank Adelbert Paul,	<i>New Haven,</i>	27 Washington st.
Charles Eugene Phillips,	<i>Southington,</i>	53 Prospect st.
William Thomas Rainey	<i>Cleveland, O.,</i>	237 Orange st.
Frank Clark Reed,	<i>Pittsburgh, Pa.,</i>	203 York st.
Harris Smith Reynolds,	<i>Poughkeepsie, N. Y.,</i>	55 Trumbull st.
George Brinckerhoff Richards,	<i>New Haven,</i>	43 Elm st.
John Robert Wheaton Sargent,	<i>Chicago, Ill.,</i>	120 York st.
William Marcelin Scaife,	<i>Allegheny City, Pa.,</i>	203 York st.
Oscar Harmon Short,	<i>New York City,</i>	39 Lynwood st.
Edward Arthur Smith,	<i>Middletown,</i>	508 Chapel st.
Frink Mansfield Smith,	<i>East Haven,</i>	East Haven
Erwin Starr Sperry,	<i>Ansonia,</i>	41 High st.
Daniel Perry Stanton,	<i>New York City,</i>	393 Temple st.
Merton Pierpont Stevens,	<i>New Haven,</i>	522 Howard av.
Arthur Peale Summers,	<i>Colorado Springs, Col.,</i>	126 High st.
Louis Denio Tourtellot,	<i>Utica, N. Y.,</i>	43 College st.
William Conquest Tucker,	<i>New York City,</i>	629 Chapel st.
Howard Beecher Tuttle,	<i>Naugatuck,</i>	242 York st.
Donald Robertson Tyler,	<i>Owensboro, Ky.,</i>	242 York st.
Alfred John Wakeman,	<i>Green's Farms,</i>	53 Prospect st.
Frank Otto Walther,	<i>Brooklyn, N. Y.,</i>	53 Prospect st.
Nathaniel P. Washburn.	<i>Bridgewater, Mass.,</i>	53 Prospect st.
Frank Warren Wentworth,	<i>Chicago, Ill.,</i>	161 York st.
Edward Gilbert Williams,	<i>Essex,</i>	17 Wooster pl.
George Henry Wood,	<i>Dayton, O.,</i>	61 Grove st.

## SPECIAL STUDENTS NOT CANDIDATES FOR A DEGREE.

Samuel Ellsworth Allen,	<i>Glendale, O.,</i>	126 High st.
Silas Enoch Burrows,	<i>Mystic,</i>	14 Lincoln st.
Wallace Arthur Butricks,	<i>New Haven,</i>	300 Columbus av.
John Cerow Dutcher,	<i>Pawling, N. Y.,</i>	90 Wall st.
Ludwig Otterson Kellogg,	<i>San Francisco, Cal.,</i>	421 Temple st.
Benjamin I. Smith,	<i>Sherburne, N. Y.,</i>	17 College st.
Francis Timothy Smith,	<i>Simsbury,</i>	7 Pearl st.
Warren A. Spalding,	<i>New Haven,</i>	89 Church st.
Francis Lewis Sperry,	<i>Tallmadge, O.,</i>	146 College st.

## SUMMARY.

GRADUATES,	.	.	.	.	.	.	.	20
SENIORS,	.	.	.	.	.	.	.	69
JUNIORS,	.	.	.	.	.	.	.	70
FRESHMEN,	.	.	.	.	.	.	.	81
SPECIAL,	.	.	.	.	.	.	.	10
TOTAL,	.	.	.	.	.	.	.	250

# SHEFFIELD SCIENTIFIC SCHOOL.

---

## I.

### OBJECTS.

THE SHEFFIELD SCIENTIFIC SCHOOL is devoted to instruction and researches in the mathematical, physical, and natural sciences, with reference to the promotion and diffusion of science, and also to the preparation of young men for such pursuits as require especial proficiency in these departments of learning. It is one of the Departments of Yale College, like the law, medical, theological, and art schools, having its separate funds, buildings, teachers, and regulations, but governed by the Corporation of Yale College, which appoints the professors and confers the degrees. It is, in part, analogous to the academic department, or classical college, and, in part, to the professional schools.

The instruction is intended for two classes of students :—

I. Graduates of this or of other Colleges, and other persons qualified for advanced or special scientific study.

II. Undergraduates who desire a training chiefly mathematical and scientific, in less part linguistic and literary, for higher scientific studies, or for various other occupations to which such training is suited.

## II.

### HISTORY AND ORGANIZATION.

The School was commenced in 1847. In 1860, a convenient building and a considerable endowment were given by Joseph E. Sheffield, Esq., of New Haven, whose name, at the repeated request of the Corporation of Yale College, was afterward attached to the foundation. Mr. Sheffield afterward frequently and munificently increased his original gifts.

In 1863, by an act of the Connecticut Legislature, the national grant for the promotion of scientific education (under the congressional enactment of July, 1862) was given to this department

of Yale College. Since that time, and especially since the autumn of 1869, numerous liberal gifts have been received from the citizens of New Haven, and from other gentlemen in Connecticut, New York, and St. Louis, for the endowment of the School, and the increase of its collections.

The action of the State led to the designation by law of a State Board of Visitors, consisting of the Governor, Lieutenant-Governor, three senior Senators, and the Secretary of the State Board of Education : and this Board, with the Secretary of the Scientific School, is also the Board for the appointment of students to hold the State scholarships.

The Governing Board consists of the President of Yale College and the Professors who are permanently attached to the School. There are several other instructors associated with them, a part of whom are connected with other departments of the College.

### III.

#### BUILDINGS AND APPARATUS.

The two buildings in which the work of instruction in the Scientific School is mainly carried on are called Sheffield Hall and North Sheffield Hall ; but instruction in Mineralogy, Geology, and Biology, including Zoölogy and Comparative Anatomy, is now given entirely in the Peabody Museum. These buildings contain a large number of recitation and lecture rooms, a hall for public assemblies and lectures, chemical and metallurgical laboratories, a photographic room, an astronomical observatory, museums, a library and reading room, besides studies for some of the professors, where their private technical libraries are kept.

The following is a summary statement of the collections belonging to the School :

1. Laboratories and Apparatus in Chemistry, Metallurgy, Physics, Photography, and Zoölogy.
2. Metallurgical Museum of Ores, Furnace Products, etc.
3. Agricultural Museum of Soils, Fertilizers, useful and injurious insects, etc.
4. Collections in Zoölogy.
5. Astronomical Observatory, with an equatorial telescope by Clark and Sons of Cambridge, a meridian circle, etc.
6. A Collection of Mechanical Apparatus, constituting the "Collier Cabinet."
7. Models in Architecture, Geometrical Drawing, Civil Engineering, Topographical Engineering and Mechanics; diagrams adapted to public lectures; instruments for field practice.



8. Maps and Charts, topographical, geological, hydrographical, etc.

The herbarium of Professor Brewer, and the astronomical instruments of Professor Lyman, are deposited in the buildings. Professor Eaton's herbarium, near at hand, is freely accessible. Students also have access to the various laboratories and collections in Natural Science in the Peabody Museum.

Students are also admitted, under varying conditions, to the College and Society libraries, the College Reading Room, the School of the Fine Arts, and the Gymnasium.

#### IV.

### THE LIBRARY.

The special technical library of the Scientific School consists of about five thousand volumes. Included in this is the "Hillhouse Mathematical Library" of twenty-four hundred volumes, collected during a long series of years by Dr. William Hillhouse, and in 1870 purchased and presented to the Institution by Mr. Sheffield. A catalogue of this collection forms a supplement to the Annual Report of the Governing Board for 1870. All the prominent scientific journals of this country and of Europe, together with the proceedings of foreign academies, and scientific societies, can be found either in this library or in the College Library to which students have access.

#### V.

### INSTRUCTION FOR GRADUATE AND SPECIAL STUDENTS.

Persons who have gone through undergraduate courses of study, here or elsewhere, may avail themselves of the facilities of the School for more special professional training in the physical sciences and their applications, gaining in one, two, or three years the degree of BACHELOR OF PHILOSOPHY, or, in two additional years of Engineering study, that of CIVIL ENGINEER, or of DYNAMIC ENGINEER.

Or, engaging in studies of a less exclusively technical character, they may become candidates for the degree of DOCTOR OF PHILOSOPHY. The instruction in such cases will be adapted to the particular needs and capacities of each student, and may be combined with that given by the graduate instructors in other departments of the University. This degree is conferred upon those who, having already taken a Bachelor's degree, engage as students in the

Department of Philosophy and the Arts for not less than two years in assiduous and successful study. It is not given upon examination to those whose studies are pursued elsewhere. The requirements for it will in some cases exact of the student more than two years of post-graduate labor; so, especially, wherever the course of undergraduate study has been, as in the Scientific School, of less than four years. The candidate must pass a satisfactory final examination, and present a thesis giving evidence of high attainment in the branches of knowledge to which he has attended. A good knowledge of Latin, German and French will be required in all cases, unless, for some exceptional reason, the candidate be excused by the Faculty. The graduating fee is ten dollars.

Subjects likely to receive special attention are suggested as follows:

Professor LYMAN, in the use of meridional and other astronomical instruments.

Professor DuBois, in the principles of thermodynamics, and utilization of heat as a source of power.

Professor RICHARDS, in dynamical engineering.

Professor HASTINGS, in selected topics in physics, and guidance in laboratory work.

Professor Brush, in the analysis and determination of mineral species, and in descriptive mineralogy.

Professor JOHNSON, in theoretical, analytical, and agricultural chemistry.

Professor BREWER, in agriculture and forest culture, in the use of the microscope, and in physical geography.

Professor CLARK, in definite integrals, differential equations, analytical mechanics, the theory of numerical approximation, with the method of least squares.

Professor EATON, in structural and systematic botany, with reference to both flowering and cryptogamous plants.

Professor ALLEN, in analytical chemistry, and in metallurgy.

Professor VERRILL, and Professor SMITH, in zoölogy and geology.

Professor CHITTENDEN, in physiological chemistry.

The same courses of study are open, for a longer or shorter time, to graduate students who do not desire to become candidates for a degree.

Students who have taken the degree of Bachelor of Philosophy, may obtain the degree of CIVIL or of DYNAMIC ENGINEER at the end of two academical years, by pursuing the following higher course of study and professional training.

The course of study for the degree of CIVIL ENGINEER will comprise—

1. Higher Calculus. Higher Geometry. Theory of Numerical Operations.
2. Analytical Mechanics. Mechanics applied to Engineering.
3. A Course of Construction and Design. Projects.
4. Practical Astronomy, with use of instruments, computations, etc.

This course will occupy one year.

To secure the requisite amount of professional knowledge and practice, the candidate will be required to furnish a comprehensive report of the results of an examination into the existing condition of some special line of constructive art ; or to present proper evidence that he has had actual charge in the field, for several months, of construction or surveying parties, or held some responsible position deemed equivalent to this.

An elaborate design must also be submitted of some projected work of construction, based upon exact data obtained from careful surveys made by the candidate, and comprising all the requisite calculations, and the necessary detailed drawings, and accompanied by full specifications of the work to be done, and the requirements to be met by the contractor.

The fee for this degree is five dollars.

The course of study for the degree of DYNAMIC ENGINEER will comprise—

1. Higher Calculus. Higher Geometry. Theory of Numerical Operations.
2. General Principles of Dynamics (Analytical Mechanics), including special application of these Principles to Dynamic problems.
3. Construction of Machines. Designs.
4. Preparation of theses on special subjects in Dynamic Engineering.

During the second year candidates will be permitted to employ such a portion of their time as may be deemed advisable or necessary in the examination of engineering works and manufacturing establishments, and may also have the privilege of entering upon professional practice, provided it is done with the knowledge and consent of the Professor of Dynamic Engineering, and under such circumstances as shall appear to him to be favorable to professional progress.

An elaborate thesis on some professional subject, with an original design, or project, accompanied by proper working drawings, will be required at the end of the second year.

The fee for this degree is five dollars.

**SPECIAL STUDENTS.**—For the benefit of those who, being fully qualified, desire to pursue particular studies without reference to the obtaining of a degree, special or irregular students are received in most of the departments of the School: not, however, in the Select Course or in the Freshman Class.

It should be distinctly understood that these opportunities are not offered to persons who are incompetent to go on with regular courses, but are designed to aid those who, having received a sufficient preliminary education elsewhere, desire to increase their proficiency in special branches.

## VI.

### REQUIREMENTS FOR ADMISSION AND COURSES OF INSTRUCTION FOR UNDERGRADUATE STUDENTS.

**TERMS OF ADMISSION.**—Candidates must not be less than fifteen years of age, and must bring satisfactory testimonials of moral character from their former instructors or other responsible persons.

For admission to the Freshman Class the student must pass a thorough examination in the following subjects:

*English*—including grammar, spelling and composition. In grammar, Whitney's Essentials of English Grammar, or an equivalent.

*History of the United States.*

*Geography.*

*Latin*—(1) Simple exercises in translating English into Latin. (Smith's "*Principia Latina*," Part I, is named as indicating the nature and extent of this requirement, and an acquaintance with it will be required unless a satisfactory substitute is offered). (2) *Cæsar*—six books of the Gallic War, or their equivalent. (As advantageous substitutes for the last three books of *Cæsar* may be suggested three books of Vergil's *Æneid* or a similar amount of Ovid.)

*Arithmetic*—Fundamental Operations, Least Common Multiple, Greatest Common Divisor, Common and Decimal Fractions, Denominate Numbers, including the Metric System of Weights and Measures; Percentages, including Interest, Discount, and Commission; Proportion, Extraction of the Square and Cube Roots.



*Algebra*—Fundamental Operations, Fractions, Equations of the First Degree with one or several unknown quantities; Inequalities, Ratio and Proportion, Involution, including the Binomial Formula for an entire and positive Exponent; Evolution, the Reduction of Radicals, Equations of the Second Degree, Progressions, Permutations and Combinations, the Method of Indeterminate Coefficients, Fundamental Properties of Logarithms, Compound Interest.

*Geometry*—Plane, Solid and Spherical; including fundamental notions of Symmetry, and examples of Loci and Maxima and Minima of Plane Figures.

*Trigonometry*—Including the Analytical Theory of the Trigonometrical Functions, and the usual formulæ; the Construction and Use of Trigonometrical Tables; and the Solution of Plane Triangles; so much, for example, as is contained in Newcomb's *Trigonometry* to Art. 79, or in Wheeler's, or Richards's, or Wentworth's *Plane Trigonometry*. The Logarithmic and Trigonometric Tables furnished at the Examination will be Newcomb's (Henry Holt & Co., New York, 1882).

While no entrance examination is held in the *History of England*, candidates for admission are urgently advised to make themselves as familiar as possible with that subject; as a knowledge of it is essential to the most successful prosecution of some of the studies of the course.

Candidates will be allowed the option of passing on the above-named subjects in two successive years. In such cases they must present themselves for examination at the June examination of the first year in the following subjects or parts of subjects: *History of the United States, Geography, Arithmetic, Plane Geometry, and Algebra to Quadratic Equations*.

In order to have this preliminary examination counted, candidates must pass satisfactorily on four of the subjects; and notice of the intention to divide the examination must be given to Professor G. J. Brush, Director of the School, on or before June 15.

For preparation in Algebra, Geometry, and Trigonometry, the recently published text-books of Professor Newcomb (Henry Holt & Co., New York), may, without indicating undue preference, be especially recommended. And to the candidate who prepares in other works, they may serve to indicate the extent and kind of attainments expected in the prescribed topics. Candidates who prepare in the Geometry of this author, may for the present omit the short chapters on Ellipse, Hyperbola, and Parabola; though they will find it advantageous to study them.

In his preparation in GEOMETRY the candidate should, as far as practicable, have suitable exercises in proving simple theorems and solving simple problems for himself. It is important, too, that he should be accustomed to the numerical application of geometric principles, and especially to the prompt recollection and use of the elementary formulæ of mensuration. In TRIGONOMETRY he should be exercised in applying the usual formulæ to a variety of simple reductions and transformations, including the solution of trigonometrical equations. Readiness and accuracy in trigonometrical calculations are also of prime importance to the candidate. If the use of logarithms is postponed in his preparation till Trigo-



nometry is taken up (which is by no means necessary or advisable), he should then have abundant applications of them to all forms of calculation occurring in ordinary practice, as well as to those appearing in the solution of triangles. Finally in all of his calculations, he should study the art of neat and orderly arrangement.

In LATIN the student should have such continued training in parsing as shall make him thoroughly familiar with declensions and conjugations, and with the leading principles of Syntax. To secure these results more effectually, the requirement has been adopted of simple exercises in translating English into Latin. As this course of exercises is designed solely as a preparation for reading, it should be begun at the earliest stage of Latin study. A very large proportion of the deficiencies in the Latin examination for several years past has been due to the neglect of the suggestions of this paragraph, and to the attempt to read a Latin author with totally inadequate grammatical preparation.

The examinations for admission in 1885, take place at North Sheffield Hall, on Thursday, Friday, and Saturday, June 25, 26, 27 (beginning at 9 A. M. on Thursday); and on Tuesday and Wednesday, September 22, 23 (beginning at 9 A. M. on Tuesday). Opportunities for private examinations may, in exceptional cases, be given at other times.

In 1885 examinations (for the Freshman Class only) will also be held in Andover, Mass., in Chicago, in Cincinnati, and in San Francisco (beginning on Thursday, June 25, at 9 A. M.), at places to be announced in local newspapers of the day previous. Candidates who propose to be present are requested to send their names to Professor G. J. Brush, Director of the School, before June 15. A fee of five dollars will be charged for admission to the examinations outside of New Haven.

Candidates for advanced standing in the undergraduate classes are examined, in addition to the preparatory studies, in those already pursued by the class they wish to enter. No one can be admitted as a candidate for a degree, later than at the beginning of the Senior year.

COURSES OF INSTRUCTION, occupying three years, are arranged to suit the requirements of various classes of students. The first year's work is the same for all; for the last two years the instruction is chiefly arranged in special courses.

The special courses most distinctly marked out are the following:

- |   |                            |
|---|----------------------------|
| (a.) In Chemistry;  | (b.) In Civil Engineering; |
| (c.) In Dynamical (or Mechanical) Engineering;              |                            |
| (d.) In Agriculture;  | (e.) In Natural History;   |
| (f.) In Biology preparatory to Medical Studies;             |                            |
| (g.) In studies preparatory to Mining and Metallurgy;       |                            |
| (h.) In select studies preparatory to other higher studies. |                            |

The arrangement of the studies is indicated in the annexed scheme.

#### FRESHMAN YEAR—INTRODUCTORY TO ALL THE COURSES:

FIRST TERM—*German*—Whitney's Grammar and Reader. *English*—Lounsbury's History of the English Language; Exercises in composition. *Mathematics*—Spherical Trigonometry (Newcomb's); Plane Analytical Geometry. *Physics*—Recitations, with experimental lectures. *Chemistry*—Recitations and Laboratory practice. *Elementary Drawing*—Practical Lessons, in the Art School.

SECOND TERM—*Language, Physics and Chemistry*—as stated above. *Mathematics*—Plane Analytical Geometry, continued. *Physical Geography*—Lectures. *Botany*—Gray's Lessons, with Lectures. *Drawing*—Isometric Drawing, with application to drawing from models and structures by measurement. Shading and tinting. Principles of orthographic projection. Reading of working-drawings and isometric construction of objects from their orthographic projections. Sections.

For the Junior and Senior years the students select for themselves one of the following Courses:

#### (a.) IN CHEMISTRY:

##### JUNIOR YEAR:

FIRST TERM—*Theoretical Chemistry*—Lectures and Recitations. *Qualitative Analysis*—Fresenius's. *Laboratory Practice*. *Blowpipe Analysis*. *German*. *French*.

SECOND TERM—*Theoretical Chemistry*—continued. *Laboratory Practice*—Quantitative Analysis, and experimental work in Organic Chemistry. *Mineralogy*—Blowpipe Analysis and determination of species. Lectures. *French*. *German*.

##### SENIOR YEAR:

FIRST TERM—*Organic Chemistry*—Lectures and Recitations. *Agricultural Chemistry*—Recitations (optional). *Laboratory Practice*—Volumetric and Mineral Analysis. *Geology*—Dana's. *Zoology*—Lectures. *French*.

SECOND TERM—*Organic Chemistry*—continued. *Laboratory Practice*—Analysis of Minerals and Technical Products. *Assaying* (optional). *Geology*—Dana's. *Mineralogy* (optional). *French*.

#### (b.) IN CIVIL ENGINEERING:

##### JUNIOR YEAR:

FIRST TERM—*Mathematics*—Analytical Geometry of three Dimensions; Elements of the Theory of Functions; Differential Calculus. *Surveying*—Field Operations. *Drawing*—Descriptive Geometry, begun. *German*. *French*.

SECOND TERM—*Mathematics*—Integral Calculus; Rational Mechanics. *Drawing*—Descriptive Geometry, concluded; Topographical. *Surveying*—Topographical. *German*. *French*.

## SENIOR YEAR:

FIRST TERM—*Field Engineering*—Laying out Curves. Location of line of Railroad with calculations of Excavation and Embankment. Hencks's Field Book for Railroad Engineers. Searles's Field Engineering. *Civil Engineering*—Resistance of Materials. Bridges and Roofs, begun. Stone Cutting, with Graphical Problems. *Geology*—Dana's. *Mineralogy*—Blowpipe Analysis and Determinative Mineralogy. *French*.

SECOND TERM—*Civil Engineering*—Bridges and Roofs. Building Materials. Stability of Arches and Walls. Mahan's Civil Engineering. *Dynamics*—Principles of Mechanism. Steam Engine. *Hydraulics*—Hydraulics and Hydraulic Motors. *Drawing*—Graphical Statics. *Astronomy*—Loomis's Astronomy with practical problems. *Mineralogy*—continued. *Geology*—Dynamic. *French*.

## (c.) IN DYNAMIC ENGINEERING:

## JUNIOR YEAR:

FIRST TERM—*Mathematics*—Analytical Geometry of Three Dimensions; Elements of the Theory of Functions; Differential Calculus. *Surveying*—Field Practice. *Drawing*—Descriptive Geometry, begun. *German*. *French*.

SECOND TERM—*Mathematics*—Integral Calculus; Rational Mechanics. *Kinematics*—General Theory of Motion and Principles of Mechanism; Elementary Combinations of Pure Mechanism; Pulleys and Belts; Gearing and forms of teeth for Wheels; Parallel Motions. *Drawing*—Descriptive Geometry, concluded. *German*. *French*.

## SENIOR YEAR:

FIRST TERM—*Statics*—Application of the Principles of Statics to Rigid Bodies; Elasticity and Strength of Materials; Forms of Uniform Strength; Stability of Structures; Construction of Roof Trusses, Girders, and Iron Bridges. *Machine Drawing*—Bolts and Nuts; Riveting; Journals, Axles, Shafts, Couplings, Pillow Blocks; Shaft-hangers, Pulleys; Connecting Rods and Cranks; Cross-heads; Pipe connections; Valves; Steam Cylinders, Stuffing Boxes, Glands, etc. Shop Visits. *Blowpipe Analysis*. *French*.

SECOND TERM—*Hydrostatics and Hydrodynamics*—Equilibrium and Pressure of fluids; Hydrometers, Manometers, Gauges, etc.; Water Pressure Engines and Water Wheels; Construction of Water Reservoirs and Conduits; Measurement of Water Supply; Discharge of pipes. *Thermodynamics*—General principles of Heat employed as a source of power; Theory of the Steam Engine; Hot Air Engines; Gas Engines. *Machine Designing*—Proportioning of Machine Parts, continued. Designing of Hoisting Engines; Shearing and Pumping Engines; Complete working-drawings for a high speed Steam Engine. Shop Visits and Reports. *Metallurgy*.

## (d.) IN AGRICULTURE:

## JUNIOR YEAR:

FIRST TERM—*Theoretical Chemistry*—Lectures and Recitations. *Qualitative Analysis*—Fresenius's. *Laboratory Practice. Blowpipe Analysis. German. French.*

SECOND TERM—*Theoretical Chemistry*—continued. *Laboratory Practice*—Quantitative Analysis. *Mineralogy*—Blowpipe Analysis and Determination of Species. *Physiology*—Huxley's. *Botany. French. German.*

## SENIOR YEAR:

FIRST TERM—*Agriculture*—Cultivation of the Staple Crops of the Northern States. Tree Planting and Forestry. *Agricultural Chemistry*—Johnson's. *Organic Chemistry*—Lectures and Recitations. *Geology*—Dana's. *Botany. Zoölogy. English. French.*

SECOND TERM—*Agriculture*—Laws of Heredity and Principles of Breeding; Lectures. *Geology*—Dana's. *Rural Economy*—Systems of Husbandry. *Agricultural Chemistry*—Johnson's. *Organic Chemistry*—continued. *Geology*—Dana's. *Zoölogy. Botany. Microscopy. English. French.*

## (e.) IN NATURAL HISTORY:

(Either Geology, Mineralogy, Zoölogy, or Botany, may be made the principal study, some attention in each case being directed to the other three branches of Natural History.)

## JUNIOR YEAR:

FIRST TERM—*Theoretical Chemistry*—Lectures and Recitations. *Qualitative Analysis*—Fresenius's; *Laboratory Practice; Recitations. Mineralogy*—Blowpipe Analysis and Determinative Mineralogy. *Botany*—Gray's Manual: *Laboratory Practice. German. French.*

SECOND TERM—*Zoölogy*—*Laboratory Practice; Recitations; Excursions (land and marine). Botany*—*Laboratory Practice; Excursions. Physiology*—Huxley's. *Mineralogy*—continued. *Physical Geography. German. French.*

## SENIOR YEAR:

FIRST TERM—*Geology*—Dana's; *Excursions. Zoölogy*—*Laboratory Practice; Lectures; Recitations; Excursions. Botany*—Herbarium Studies; Gray's Text-book; *Excursions. French.*

SECOND TERM—*Geology*—Dana's. *Anatomy of Vertebrates*—Huxley's. *Zoölogy*—*Laboratory Practice; Recitations; Lectures. Botany*—Herbarium Studies, especially in the Cryptogamous Orders; Botanical Literature; Essays in Descriptive Botany. *Meteorology. French.*



Besides the regular courses of recitations and lectures on structural and systematic Zoölogy and Botany, and on special subjects, students are taught to prepare, arrange, and identify collections, to make dissections, to pursue original investigations, and to describe genera and species in the language of science. For these purposes, large collections in Zoölogy and Palæontology belonging to the College are available, as are also the private botanical collections of Professor Eaton.

#### (f.) IN BIOLOGY PREPARATORY TO MEDICAL STUDIES:

##### JUNIOR YEAR:

FIRST TERM—*Theoretical Chemistry*—Lectures and recitations. *Qualitative Analysis*—Fresenius's; Laboratory Practice; Recitations. *Mineralogy*—Blowpipe Analysis and Determinative Mineralogy. *German. French.*

SECOND TERM—*Anatomy and Histology*—Laboratory Practice, Lectures and Recitations. *Physiology*—Huxley's; Practical Exercises. *Embryology*—Lectures. *Theoretical Chemistry*—continued. *Mineralogy*—continued. *Botany*—Lectures; Practical Exercises in Phenogamous Plants; Excursions. *German. French.*

##### SENIOR YEAR:

FIRST TERM—*Physiological Chemistry*—Recitations, Laboratory Practice, and Lectures. *Organic Chemistry*—Lectures and Recitations. *Zoölogy*—Lectures. *Botany*—Practical Exercises, Lectures and Excursions. *Geology*—Dana's. *French.*

SECOND TERM—*Physiological Chemistry*—continued. *Experimental Toxicology. Geology*—Dana's. *Zoölogy*—Lectures. *Sanitary Science*—Lectures. *Laws of Heredity and Principles of Breeding*—Lectures. *French.*

#### (g.) IN STUDIES PREPARATORY TO MINING AND METALLURGY:

Young men desiring to become Mining Engineers can pursue the regular Course in Civil or Mechanical Engineering, and at its close can spend a fourth year in the study of metallurgical chemistry, mineralogy, etc.

#### (h.) IN THE SELECT STUDIES PREPARATORY TO OTHER HIGHER STUDIES:

##### JUNIOR YEAR:

FIRST TERM—*Mineralogy*—Blowpipe Analysis and Determinative Mineralogy. *Physical Geography*—Guyot; Lectures. *English*—Early English. *History*—Bright's History of England. *French. German.*

SECOND TERM — *Mineralogy* — Lectures. *Astronomy. Botany* — Lectures; Excursions; Laboratory Practice. *English*—Chaucer, Bacon, Shakspere. *History*—Bright's History, continued. *German. French.*



## SENIOR YEAR:

FIRST TERM—*Geology*—Recitations and Excursions. *Zoölogy*—Lectures and Excursions. *Linguistics*—Whitney's Life and Growth of Language. *English*—Shakspeare. *Constitutional Law of the United States*. *French*.

SECOND TERM—*Geology*—continued. *Meteorology*—Lectures. *Sanitary Science*—Lectures. *Political Economy*—Recitations and Lectures. *English*—Shakspeare, Milton, Dryden, Pope, Gray, and later authors. *French*.

Exercises in English Composition are required during the entire course from all the students. The preparation of graduating theses is among the duties of the Senior Year.

Lectures on Military Science and Tactics are annually given by General Abbot, and other officers of the Engineer Corps of the United States Army.

DRAWING.—The course in drawing extends through the three years. During the first term of Freshman year, the students practice free-hand drawing at the Art School building, under the direction of Professor Niemeyer, of the Yale School of the Fine Arts. After the completion of the course in free-hand drawing, instruction is given by Mr. F. R. Honey, during the second term in the elementary principles of instrumental drawing, embracing Elementary projection drawing, Isometric drawing, and Descriptive Geometry as far as warped Surfaces. This course is obligatory upon all.

During the Junior and Senior years, instruction in drawing is obligatory only on the students in Civil and Mathematical Engineering. In the former year the system of instruction embraces shades and shadows, tinting, perspective, and warped surfaces. By this method all the problems in Descriptive Geometry are required to be worked out on the drawing-board instead of the black-board. The course extends through the entire year, and is under the direction of Mr. Honey.

In Senior year, students are required to apply the principles of drawing already obtained to works of construction, under the general supervision of the Professors of Civil and of Dynamic Engineering.

**VII.****METHODS OF INSTRUCTION.**

The instruction in this institution is given chiefly in small classrooms, in connection with recitations and by familiar lectures, illustrated by the apparatus at the command of the various teachers. In many studies weekly excursions are made for the purpose of collecting specimens and examining natural phenomena.

In Chemistry and Metallurgy the students work several hours daily in well-appointed laboratories, under the direct superintendence of the instructors, and are guided through systematic courses of quantitative and qualitative analysis, assaying, and the blow-pipe determination of minerals and ores.

In the course in Biology, instruction in Comparative Anatomy and Histology is given in the laboratory five or six mornings each week; the student working out for himself, by dissection and the examination of preparations, the anatomy of several types of animals, and making a large part of the microscopical preparations used in the study of the different tissues. In Physiological Chemistry the student works four hours daily in the study of the chemical processes of the body and in the preparation and examination of the more important proximate principles; thus, under the head of nutrition the various digestive processes are successively studied, artificial digestions are made, the products are separated and examined, while their physiological functions are demonstrated by experiments on animals. Special attention is also paid to the micro-chemistry of the various tissues. Students are likewise trained in qualitative and quantitative analysis of urine, both in health and disease, not alone for the practical results to be obtained, but especially for the means which it affords of studying the metabolic changes of the body. Toxicology is taught by experiments on animals; the absorption and elimination of poisons, together with other points of physiological value, being demonstrated by chemical analysis of tissues and secretions. In each of these subjects laboratory instruction is supplemented by recitations and lectures.

In Botany, during the summer of Junior year, exercises in analyzing and identifying plants occur two or three times a week, followed by practice in writing characters and descriptions of plants from living specimens. Students are shown also the best

methods of collecting and preserving for future study, specimens of Flowering Plants, Ferns, Mosses, Algæ, etc. In the autumn term of Senior year the work of the summer is continued. Students are encouraged to pursue special lines of Botanical investigation, and varied assistance is rendered them according to their needs. The final examination is intended to show what they have learned, and the collections they have made are considered to be of minor importance.

In Zoölogy excursions are made during the Summer term of Junior and Fall term of Senior year, in company with the instructors, for the purpose of observing the habits and making collections of marine, fresh-water, and terrestrial animals of all classes. Each student is required to prepare and present for examination a collection containing a specified number of species, and illustrating the various classes of animals. He must also be able to pass an examination upon his collection, at least to the extent of explaining the classes and orders illustrated, and showing why particular specimens belong to the respective classes.

In Geology excursions are made for the purpose of examining geological phenomena and making special collections of rocks and minerals. Each student is required to pass a satisfactory examination on his collection at the end of the first term of Senior year.

In Civil Engineering the students, besides attending on Class recitations and lectures, pursue a systematic course of exercises in the different branches of Geometrical Drawing and Graphical Statics, and in the application of the principles of drawing to works of construction ; and have good practice in the operations of Surveying and Field Engineering—acquiring facility in the use and adjustment of Surveying and Engineering Instruments. In Topographical Surveying they are instructed in the use of the Plane Table for topographical work, and are required to prepare a detailed chart of the ground surveyed—exhibiting the contour lines and all its topographical features. Numerous problems of computation, and graphical exercises, are included in the Course of Construction pursued in the Senior year. A course of Blow-pipe Analysis is also taken by the Senior Class, that a more thorough knowledge may be gained of minerals and building stones.

In Dynamic Engineering the method of instruction is by recitation and lectures, supplemented by work in the drawing room, by shop visits, and visits of inspection in and out of the city, and

by tests with the indicator and dynamometer. The lectures are illustrated by models, by large cartoons adapted for the purpose, and by the complete collection of working drawings of the Novelty Iron Works, owned by the School. In the drawing room, detailed working drawings of various machines are made. A general sketch of the proposed machine is given and complete detailed drawings are required, in proper shape for the pattern-maker or machinist. The student is taught the best practice, and his judgment is trained in choosing relative proportions. The student is required to describe the steps to be followed in building the machine, and to make as nearly as possible an estimate of its cost. Pattern, foundry, blacksmithing and machine work are studied in detail. In the visits, machinery and processes are critically examined in detail, and sketches of important machines with written descriptions are required.

In addition to the above, a course of lectures is given every winter by the professors of the schools and others, on topics of popular interest.

### VIII.

#### TUITION CHARGES.

The charge for tuition for undergraduate students is \$150 per year, payable, \$55 at the beginning of the first and of the second term, and \$40 at the middle of the second term. The student in the Chemical course has an additional charge of \$70 per annum for chemicals and use of apparatus. He also supplies himself at his own expense with gas, flasks, crucibles, etc., the cost of which should not exceed \$10 per term. A fee of \$5 is charged members of the Freshman Class for chemicals and materials used in their laboratory practice, and the same fee is required from all (except Chemical students) who take the practical exercises in Blow-pipe Analysis and Determinative Mineralogy. A fee of \$5 a term will also be charged to the students in the Zoölogical laboratory, for materials and use of instruments. An additional charge of \$5 is annually made to each student for the use of the College Reading Room and Gymnasium.

For graduate students the charge for tuition is \$100 per year.



**IX.****CHURCH SITTINGS.**

Free sittings for students in this department of Yale College are provided as follows : in the Center Church (Congr.) ; in the Trinity (Episc.) ; and in the First Methodist Church.

Those who prefer to pay for a sitting for a year, more or less, in the churches above mentioned, or in any other church of any denomination, will be aided on application to the Secretary of the School.

Sittings in the Gallery of the College Chapel are free as heretofore to the students of this department.

**X.****DEGREES.**

Students of this department, on the recommendation of the Governing Board, are admitted by the Corporation of Yale College to the following degrees. They are thus conferred :

1. **BACHELOR OF PHILOSOPHY** : on those who complete any of the three-years courses of study, passing all the examinations in a satisfactory manner, and presenting a graduation thesis.

The fee for graduation as Bachelor of Philosophy, including the fee for Triennial Catalogues, Commencement Dinners, etc., is \$10 ; unless the person taking the degree is also an academical graduate, when it is but \$5.

2. **CIVIL ENGINEER** and **DYNAMICAL ENGINEER** : The requirements for these degrees are stated on page 37.

3. **DOCTOR OF PHILOSOPHY** : The requirements for this degree are stated on page 35.

**XI.****TERMS AND VACATIONS.**

The next academic year begins Thursday, September 24, 1885. The first term begins thirteen weeks from Commencement-day and continues thirteen weeks : the second term begins regularly on the first Thursday in January and continues until Commencement-day, with a spring recess—usually of eight days—including Easter. (See Calendar, p. 20.)



**XII.****ANNOUNCEMENT IN RESPECT TO STATE STUDENTS.**

The scholarships established in this School in consequence of the bestowal upon it of the Congressional grants are designed to aid young men who are in need of pecuniary assistance in fitting themselves for agricultural and mechanical pursuits of life. All applicants must be citizens of Connecticut. In case there are more applicants than vacancies, candidates will be preferred who have lost a parent in the military or naval service of the United States, and next to these such as are most in need of pecuniary assistance ; and the appointments will be distributed as far as practicable among the several counties in proportion to their population. The appointing Board for the current year, consisting of the Board of Visitors of the State and the Secretary of the School, will meet on June 23, 1885, and at or about the same time in the year 1886, due notice of which will be given by publication in every county in the State. All applications should be made previous to that time. Blank forms for application will be sent, when requested, by Professor GEORGE J. BRUSH, Secretary of the Appointing Board.

**XIII.****ANNIVERSARY.**

The Anniversary of the School is held on Tuesday of the Commencement week in Yale College, when selections from the graduation theses are publicly read. The degrees are publicly conferred by the President and Fellows of Yale College on Commencement Day.

# APPENDIX

---

## ENTRANCE EXAMINATION PAPERS.

---

The following are the papers for 1884, upon which applicants for admission were examined at the June and September examinations.

## ARITHMETIC.

JUNE, 1884.

1. Reduce  $\frac{3}{4}$ ,  $\frac{2}{5}$ ,  $\frac{4}{6}$ , and  $\frac{2}{11}$  to the least common denominator.
2. (a) Divide  $\frac{\frac{7}{8}}{\frac{3}{11}}$  of  $12\frac{1}{2}$  by  $\frac{\frac{1}{3}}{\frac{7}{2}}$  of  $8\frac{3}{4}$ .  
(b.) Divide .0003538709 by .007643 and explain the position of the decimal point.
3. In 80937864 square inches how many acres?
4. A merchant sold a piece of cloth for \$24, and thereby lost 25 per cent.; what would he have gained had he sold it for \$34?
5. A gentleman wishes to take \$1,000 from the bank; for what sum must he give his note, payable in 5 months, at 6 per cent. discount?
6. Extract the square root of 10 to five decimal places.
7. Give the approximate value of the meter in inches; of the gram in grains; of the kilogram in pounds avoirdupois.
8. What is to be the depth of a box  $12^m$  long and  $8^m$  wide, in order to hold 2,500 hectoliters?

## ARITHMETIC.

SEPTEMBER, 1884.

1. Find the greatest common divisor of 918 and 522.
2. Reduce  $\frac{7\frac{1}{2} \text{ of } 5\frac{6}{15}}{2\frac{1}{4} + 3\frac{1}{8}}$  to its lowest terms and express the result decimally.
3. I invested one-half of my capital in bank stock, and the balance in railroad stock. I gained 11 per cent. on the bank stock, and lost  $7\frac{1}{2}$  per cent. on the railroad stock, and my net gain was \$175. How much was my capital?
4. A and B engage in trade with \$500. A put in his stock for 5 months, and B put in his for 4 months. A gained \$10, and B gained \$12; what sum did each put in?
5. Extract the cube root of 1860867.
6. When it is 2h. 36m. A. M. at the Cape of Good Hope, in longitude  $18^\circ 24'$  east, what is the time at Cape Horn, in longitude  $67^\circ 21'$  west?
7. Give the metric measures of length and their equivalents in denominations in use.
8. In a field 200 meters long and 56 meters broad, how many acres?

## GEOMETRY.

JUNE, 1884.

NOTE 1.—Candidates for examination in this subject as a whole should take the whole of this paper: those for the first year's partial examination, the first part of it: those for the second year's partial examination, the second part.

NOTE 2.—State at the head of your paper what text-book you have studied on the subject, and to what extent.

I.—*Plane Geometry.*

1. The bisectors of the three interior angles of a triangle meet in a point equally distant from the sides of the triangle.

2. The line drawn from the middle of one of the non-parallel sides of a trapezoid parallel to the parallel sides is equi-distant from them, equal in length to half their sum, and bisects the opposite side.

3. If from a point without a circle a secant and a tangent be drawn, the tangent is a mean proportional between the whole secant and the part without the circle.

4. (a) Define a geometric locus.

(b) If the base and vertical angle of a triangle be given; find the locus of the vertex.

5. If the apothegm of a regular hexagon is  $h$ , what is the area of the ring included between its inscribed and circumscribed circles?

II.—*Solid and Spherical Geometry.*

6. In a convex polyhedral angle the sum of the face angles is less than a circumference.

7. Similar polyhedrons are to each other as the cubes of their homologous edges.

8. The frustum of a cone of revolution whose altitude is 20 feet, and the diameters of its bases 12 feet and 8 feet respectively, is divided into two equal parts by a plane parallel to its bases. What is the altitude of each part?

9. Find the ratio of the surfaces, and the ratio of the volumes, of a cube and of the inscribed sphere.

10. In two polar triangles each side of the one is the supplement of the opposite angle of the other.

## GEOMETRY.

SEPTEMBER, 1884.

[State what text-book you have studied on the subject, and to what extent.]

1. Determine the symmetrical figure of a trapezium with respect to a point lying without, and with respect to an axis cutting the trapezium.

2. Of all triangles having the same base and equal perimeters, that which is isosceles is the maximum.

3. To construct a triangle which shall be equal in area to a given polygon.

4. Construct an angle of  $60^\circ$ , one of  $30^\circ$ , one of  $120^\circ$ , one of  $45^\circ$ , and one of  $135^\circ$ .

5. If a line intersect a plane, it makes a less angle with its projection than with any other line in the plane passing through the point of intersection.

6. The surface of a cone of revolution is 540 square inches; what is the surface of a similar cone whose volume is 8 times as great?

7. Define *equal spherical triangles* and *symmetrical spherical triangles*. Show that the latter cannot be made to coincide except in one case.

8. Find the surface and volume of a sphere whose radius is 10 inches; also find the area of a spherical triangle on this sphere, the angles of the triangle being  $80^\circ$ ,  $85^\circ$ , and  $100^\circ$  respectively.

## ALGEBRA.

JUNE, 1884.

NOTE 1.—Candidates for examination in this subject as a whole should take the whole of this paper: those for the first year's partial examination, the first part of it; those for the second year's partial examination, the second part.

NOTE 2.—State at the head of your paper what text-book you have studied on the subject and to what extent.

## I.

1. Find the factors of  $x^2 + 8x + 16$ ;  $x^3 + 8$ ;  $x^4 - 16$ .

2. Solve the equation  $\frac{ab+x}{b^2} - \frac{b^2-x}{a^2b} = \frac{x-b}{a^2} - \frac{ab-b}{b^2}$ .



3. Given  $\frac{a}{x} + \frac{b}{y} = m$  and  $\frac{b}{x} - \frac{a}{y} = n$ , to find  $x$  and  $y$ .
4. (a) Expand  $(x+2)^4$ . (b) Simplify  $\sqrt[3]{a^3 + 3a^2b + 3ab^2 + b^3}$ .
5. Simplify (a)  $\sqrt[4]{16a^{12}b^8c^4}$ . (b).  $\sqrt[6]{\frac{64x^9}{729x^3}}$ .
- (c).  $(-1)^{2n}$ . (d).  $\sqrt[3]{81} - \sqrt[3]{192}$ .

## II.

6. Solve the equation  $8x^2 - 7x + 34 = 0$  and verify your solution.
7. Given  $x - y = 7$  and  $x^2 + xy + y^2 = 13$ , to find  $x$  and  $y$ .
8. Given  $\frac{\sqrt{7x^2+4} + 2\sqrt{3x-1}}{\sqrt{7x^2+4} - 2\sqrt{3x-1}} = 7$ , to find  $x$ .
9. Insert two geometrical means between  $a$  and  $b$ .
10. What sum of money ( $s$ ) must be set apart annually, and put at compound interest as a sinking fund, to pay a debt of  $a$  dollars in  $n$  years, if the interest on one dollar for one year is  $r$ ?

## ALGEBRA.

SEPTEMBER, 1884.

[State what text-book you have studied on the subject and to what extent.]

1. Given  $\frac{x-y+1}{x-y-1} = a$ , and  $\frac{x+y+1}{x+y-1} = b$ , to find  $x$  and  $y$ .
2. If  $\frac{a_1}{b_1} = \frac{a_2}{b_2} = \frac{a_3}{b_3} = r$ , show (1) that  $r = \frac{a_1 + a_2 + a_3}{b_1 + b_2 + b_3}$ .
- (2) that  $r = \sqrt[2]{\frac{a_1^2 + a_2^2 + a_3^2}{b_1^2 + b_2^2 + b_3^2}}$ .
3. Expand  $(x - 2a)^5$  by the binomial formula.
4. Simplify (1.)  $\frac{x^{\frac{2}{3}} - y^{\frac{2}{3}}}{x^{\frac{1}{3}} - y^{\frac{1}{3}}}$ . (2.)  $\sqrt{8} + \sqrt{50} - \sqrt{18}$ .
- (3.)  $\sqrt[3]{2} \times \sqrt[6]{\frac{1}{3}} \times \sqrt[3]{3}$ . (4.)  $(\sqrt{-1})^2$ .
5. Find the square root of  $28 + 10\sqrt{3}$ , in its simplest form.
6. Form an equation whose roots shall be 3 and  $-5$ .
7. Solve the equation  $6x^2 + x - 12 = 0$  and resolve its first member into its factors.
8. The number of permutations of  $n$  things 3 together is 6 times the number of combinations 4 together, find  $n$ .

9. Develop  $\frac{1+x}{2+3x}$  into a series by the method of indeterminate coefficients (four terms of the series will suffice).

10. (1) What is the logarithm of zero in a system whose base is greater than one? Demonstrate your answer.

(2.) Transform  $\log \sqrt[3]{\frac{a^3 b^4 c^6}{de}}$  into a form well adapted to computation.

## TRIGONOMETRY.

JUNE, 1884.

[State what text-book you have studied on the subject, and to what extent.]

1. Define the *radian* or unit of circular measure of an angle. Express an angle of 0.5 in degrees.

2. Deduce a formula for expressing  $\sin \alpha$  in terms of  $\tan \alpha$ .

3. Assuming the fundamental formula for the cosine of the sum of two angles show that

$$\cos \frac{1}{2} \alpha = \sqrt{\frac{1 + \cos \alpha}{2}}.$$

4. Given (a)  $\tan x + \cot x = 10$  to find  $\tan x$ .

(b)  $\sec x + \tan x = \frac{5}{2}$  to find  $\tan x$ .

How many values of  $x$  are there between 0 and  $2\pi$  that will satisfy these equations respectively?

5. Write the usual formulæ for solving the different cases of oblique plane triangles, and explain carefully your notation.

6. Having given three sides of a triangle  $a = 701.22$  feet,  $b = 438.26$  feet,  $c = 613.57$  feet to find the three angles and the area of the triangle. Check your calculation of the angles, and show how you might check that of the area.

## TRIGONOMETRY.

SEPTEMBER, 1884.

[State what text-book you have studied on the subject, and to what extent.]

1. Express  $60^\circ$  in *radians* or units of circular measure.

2. Find the functions of  $930^\circ$ .

3. Name the angles between  $0^\circ$  and  $720^\circ$  whose tangent is 1; also those whose tangent is  $-1$ .

4. Assuming the usual data deduce the following formulæ.

$$(1) \tan 2a = \frac{2 \tan a}{1 - \tan^2 a}.$$

$$(2) \sin a + \sin b = 2 \sin \frac{1}{2}(a + b) \cos \frac{1}{2}(a - b).$$

5. Given  $\tan \left( \frac{\pi}{4} - \theta \right) + \cos \left( \frac{\pi}{4} - \theta \right) = 4$ , to find  $\tan \theta$ .

6. Given two sides of a triangle,  $b = 2956.2$ ,  $c = 9090.8$  and the included angle  $A = 98^\circ 29'.6$  to find the remaining parts of the triangle.

## ENGLISH GRAMMAR.

JUNE, 1884.

[State what text-book you have used.]

I. Define noun, pronoun, interjection and conjunction.

II. Inflect throughout the personal pronouns.

III. State the difference between the strong (or old) and the weak (or new) conjugation of the verb, and give three illustrative examples of each.

IV. Parse the following sentence.

The best men whom he had seen were opposed to the views that he advocated.

## LATIN.

JUNE, 1884.

I. Translate *as literally as possible* :

a. Quod si veteris *contumeliae* oblivisci vellet, num etiam recentium *injuriarum*, quod, eo invito, iter per provinciam per vim tentassent, quod Aeduos, quod Ambarros, quod Allobrogas vexassent, memoriam deponere posse? Quod sua victoria tam insolenter gloriarentur, quodque tam diu se impune injurias tulisse admirarentur, eodem pertinere.

b. Hanc si nostri transirent, hostes expectabant; nostri autem, si ab illis initium *transeundi* fieret, ut impeditos aggrederentur, parati in armis erant. Interim proelio equestri inter duas acies contendebatur. Ubi neutri *transeundi* initium faciunt, secundiore equitum *proelio* nostris, Cassar suos in castra reduxit.

c. Nostri primo integris viribus fortiter *repugnare*, neque ullum frustra telum ex loco superiore mittere ; ut quaeque pars  
 15 castrorum *nudata* defensoribus premi videbatur, eo occurrere et auxilium ferre, sed hoc superari, quod diuturnitate pugnae hostes defessi proelio excedebant, alii integris viribus succedebant.

d. At hostes ubi primum nostros equites conspexerunt, quorum erat quinque millium numerus, quum ipsi non amplius octingentos equites haberent, quod ii, qui *frumentandi* causa ierant trans Mosam, nondum redierant, nihil timentibus nostris, quod legati eorum paulo ante a Caesare discesserant atque is dies *induciis* erat ab his petitus, impetu facto celeriter nostros  
 25 perturbaverunt.

e. Mittuntur ad Caesarem confestim ab Cicerone litterae, magnis propositis praemiis si *pertulissent*. Obsessis omnibus viis missi intercipiuntur. Noctu ex materia, quam munitionis causa comportaverant, tarres admodum centum et viginti excitantur incredibili celeritate: quae deesse *operi* videbantur, perficiuntur.

f. Ubii, qui ante obsides dederant atque in deditionem venerant, purgandi *sui* causa ad eum legatos mittunt, qui doceant neque auxilia ex sua civitate in Treviros missa, neque  
 35 ab se fidem laesam: petunt atque orant, ut sibi parcat, ne communi odio Germanorum innocentes pro nocentibus poenas pendant, si amplius *obsidum* velit, dare pollicentur.

II.—1. Decline *iter* (2), *veteris* (1), *vim* (3).

2. Compare *secundiore* (11), *fortiter* (13), *primo* (13).

3. Write the synopsis, active and passive, of *conspexerunt* (19).

4. Parse in full each word in the first two lines of passage c.

5. Give the principal parts of the following: *oblivisci* (1), *vellet* (1), *deponere* (4), *premi* (15), *excedebant* (17), *petitus* (24), *obsessis* (27), *deesse* (30), *perficiuntur* (31), *doceant* (34), *laesam* (35), *parcat* (35), *pendant* (37).

6. State the construction of all italicized words.

7. Quote (in full) from the above text an example of indirect statement.

8. Convert into direct statement the example quoted in answer to question seventh.



## LATIN.

SEPTEMBER, 1884.

I. Translate as literally as possible—

*a.* Ubi per exploratores Caesar certior factus est, tres jam copiarum partes Helvetios id *flumen* transduxisse, quartum vero partem citra flumen Ararim *reliquam* esse, de tertia vigilia cum legionibus tribus e castris profectus ad eam partem  
5 pervenit, quae nondum flumen transierat.

*b.* Interim omnis ex fuga Suessionum multitudo in oppidum proxima *nocte* convenit. Celeriter vineis ad oppidum actis, aggere jacto, turribusque constitutis, magnitudine operum, quae neque viderant ante Galli neque audierant, et  
10 celeritate Romanorum *permoti*, legatos ad Caesarem de deditione mittunt, petentibus Remis ut conservarentur impetrant.

*c.* Itaque quum intelligeret omnes fere Gallos novis *rebus* studere et ad bellum mobiliter celeriterque excitari, omnes autem homines natura libertati studere et conditionem servi-  
15 tutis odisse, priusquam plures civitates conspirarent, partendum *sibi* ac latius distribuendum exercitum putavit.

*d.* Quod ubi Caesar animadvertit, naves longas, quarum et species erat *barbaris* inusitatio et *motus* ad usum expeditior, paulum removeri ab onerariis navibus et remis incitari et ad  
20 latus apertum hostium constitui, atque inde fundis, sagittis, tormentis, hostes propelli ac submoveri jussit: quae res magno usui *nostris* fuit.

*e.* Ex his omnibus longe sunt humanissimi, qui Cantium incolunt, quae regio est maritima omnis, neque multum a Gallica differunt *consuetudine*. Interiores plerique frumenta non serunt, sed lacte et *carne* vivunt pellibusque sunt vestiti.

*f.* Erat, ut supra demonstravimus, manus certa nulla, non oppidum, non praesidium, quod se *armis* defenderet, sed omnes in partes dispersa *multitudo*. Ubi cuique aut vallis abdita aut  
30 locus silvestris aut palus impedita spem praesidii aut salutis aliquam offerebat, consederat.

II.—1. Decline *certior* (1), *aggere* (8), *turribus* (8).2. Compare *mobiliter* (13), *latius* (16), *apertum* (20).3. Write the synopsis, active and passive, of *propelli* (21), or *removeri* (19).4. Parse in full each word in the last two lines of passage *c.*



5. Give the principal parts of the following : *profectus* (4), *jacto* (8), *mittunt* (11), *studere* (13), *odisse* (15), *animadvertit* (17), *incolunt* (24), *differunt* (25), *vivunt* (26), *serunt* (26), *dispersa* (29), *consederat* (31).

6. State the construction of all italicized words.

7. Quote (in full) from the above text an example of indirect statement.

8. Convert into direct statement the example quoted in answer to question seventh.

### LATIN EXERCISE.

JUNE, 1884.

1. Despatches<sup>1</sup> are immediately<sup>2</sup> sent<sup>3</sup> by Cicero<sup>4</sup> to<sup>5</sup> Caesar.
2. Cicero immediately sends despatches to Caesar.
3. The despatches were not carried-through<sup>6</sup>, as all the roads were occupied. (Use the ablative absolute.)
4. The messengers<sup>7</sup> are captured<sup>8</sup> *in consequence of the occupation of the woods* (ablative absolute).
5. If the roads had not been occupied the messengers would not have been captured (ablative absolute).
6. Since the enemy had occupied the roads, the messengers were unable to carry-through the despatches.
7. The messengers say they will carry through the despatches.
8. Rewrite sentence seventh so as to illustrate direct statement.
9. The messengers formed the plan of *carrying through the despatches*. (Translate the italicized words in two ways.)
10. The messengers, who *through the occupation of the woods* (abl. absolute), were unable to carry through the despatches were captured by the enemy (plural).

<sup>1</sup> litterae.

<sup>4</sup> Cicero.

<sup>7</sup> missus.

<sup>2</sup> confestim.

<sup>5</sup> ad.

<sup>8</sup> interciperere.

<sup>3</sup> mittere.

<sup>6</sup> perferre.

### LATIN EXERCISE.

SEPTEMBER, 1884.

1. The Helvetians<sup>1</sup> lead<sup>2</sup> (their) forces across<sup>3</sup> the river<sup>4</sup>.
2. The forces of the Helvetians are being led across the river.
3. Caesar was informed<sup>4</sup> (that) the Helvetians were leading their forces across the river.

4. Caesar was informed (that) the Helvetians had led their forces across the river.

5. Three-fourths (i. e. parts<sup>5</sup>) of the forces were led across the river by the Helvetians.

6. Three-fourths of the forces having been led across the river ; Caesar cut to pieces<sup>6</sup> the fourth<sup>7</sup> part.

7. The fourth part which had not yet<sup>8</sup> crossed<sup>9</sup> the river was cut to pieces by Caesar.

8. Caesar departs<sup>9</sup> with three legions<sup>10</sup> *to cut to pieces a part of the Helvetians.* (Translate the italicized words in two ways.)

9. Caesar says he has cut to pieces the fourth part of the forces.

10. Caesar said he had cut to pieces the fourth part of the forces.

<sup>1</sup> Helvetius.

<sup>4</sup> certior fieri.

<sup>7</sup> quartus.

<sup>2</sup> transducere.

<sup>5</sup> pars.

<sup>8</sup> nondum.

<sup>3</sup> flumen.

<sup>6</sup> concidere.

<sup>9</sup> proficisci.

<sup>10</sup> legio.

## GEOGRAPHY.

JUNE, 1884.

1. Bound the State of Pennsylvania ; state the names of its chief cities and tell how they are situated ; what are the principal rivers in the State and on its borders ?

2. Where does the Missouri River rise ; describe the direction of its course ; what States and territories does it pass through or touch from its head to its mouth ?

3. Name the States and countries in their order, which touch the Gulf of Mexico, beginning on its northeast.

4. Bound Brazil ; give the names of two cities in it and tell how they are situated ; what are its chief rivers and in what part of the country do they run ?

5. Bound China ; give the names of three of its cities and tell how they are situated ; tell what are its chief rivers and where they run.

6. Where are the following islands : Azores ; Bermudas ; Philippine ; Disco ; St. Helena ?

## GEOGRAPHY.

SEPTEMBER, 1884.

1. Bound the State of Kentucky; give the names of its chief cities, and tell how they are situated; what are the principal rivers in the State and on its borders?
  2. Where is the river Danube; where does it rise, what direction does it run, where does it empty and what countries does it touch in its course?
  3. What countries surround the Baltic Sea; tell which direction each lies from the sea; where and what is the entrance to the sea.
  4. Beginning east, name in their order the States and territories of the United States which touch Mexico; name one city in each of these States and territories.
  5. Bound Siberia; to what government does it belong; what mountains on its western boundary; name two rivers in it which empty into the Arctic ocean; what peninsula in its eastern part?
  6. Where are the following cities: Havana; Florence; Winnipeg; Atlanta; Acapulco?
- 

## HISTORY OF THE UNITED STATES.

JUNE, 1884.

- I. Give the dates of the battle of Great Meadows, the Hartford convention, the emancipation of the slaves, Missouri Compromise and state who was President in 1820, 1830, 1840, 1850.
- II. Give an account of the formation of the colony of Maryland.
- III. How and by what nation was Manhattan Island first settled, and how did it come into the possession of England?
- IV. Describe the Stamp Act. When was it passed and when and why repealed?
- V. Relate the causes of the War of 1812 and state by what treaty it was ended.
- VI. What was the Kansas-Nebraska bill and when was it passed?

## HISTORY OF THE UNITED STATES.

SEPTEMBER, 1884.

I. Give the dates of the Albany convention, the battle of Tippecanoe, Dorr's Rebellion, the attack on Fort Sumter and state who was president in 1812, 1822, 1832, 1842.

II. Describe the planting of the colony of Pennsylvania.

III. Give an account of the Pequod War.

IV. When and why was the Boston Port Bill passed and what did it provide?

V. Give an account of Shays' Rebellion.

VI. What treaty ended the Mexican War and what were its provisions?

# CONTENTS OF THE REPORT.

	Page
State Board of Visitors, .....	2
REPORT OF THE STATE BOARD OF VISITORS, .....	3
ANNUAL STATEMENT OF THE GOVERNING BOARD, .....	5
Addition to the Corps of Professors, .....	6
Addition to the Laboratory of Physiological Chemistry, .....	7
Addition to the Department of Physics, .....	8
Gifts, .....	9
Additions to the Zoological Collections, .....	11
States represented in the School, .....	13
Public Lectures, .....	14
Lectures on Military Science, .....	14
Anniversary, .....	15
Prizes, .....	17

# CONTENTS OF THE PROGRAMME.

	Page
Calendar, .....	20
Corporation, .....	21
Governing Board, .....	23
Lecturers, Instructors, and Assistants, .....	24
Graduate Students, .....	25
Undergraduate Students, .....	26
Seniors, .....	26
Juniors, .....	28
Freshmen, .....	30
Special, .....	32
Summary of Students, .....	32
Sheffield Scientific School—	
1. Objects, .....	33
2. History and Organization, .....	33
3. Buildings and Apparatus, .....	34
4. The Library, .....	35
5. Instruction for Graduate and Special Students, .....	35
6. Requirements for Admission and Courses of Instruction for Under-graduate Students, .....	38
7. Methods of Instruction, .....	46
8. Tuition Charges, .....	48
9. Church Sitzings, .....	49
10. Degrees, .....	49
11. Terms and Vacations, .....	49
12. Announcement in respect to State Students, .....	50
13. Anniversary, .....	50
Appendix—Entrance Examination Papers, .....	51



STATE OF CONNECTICUT.

---

ANNUAL REPORT

OF

The Connecticut Agricultural

EXPERIMENT STATION

For 1884.

---

PRINTED BY ORDER OF THE GENERAL ASSEMBLY.

---

NEW HAVEN:

TUTTLE, MOREHOUSE & TAYLOR, PRINTERS.

1885.

# OFFICERS

OF

## The Connecticut Agricultural Experiment Station,

1884.

---

### STATE BOARD OF CONTROL.

*Ex-officio.*

HIS EXC. THOMAS M. WALLER, *President.*

*Appointed by Connecticut State Agricultural Society :*

HON. E. H. HYDE, *Stafford, Vice-President.*

*Term expires*  
July 1, 1885.

*Appointed by Board of Trustees of Wesleyan University :*

PROF. W. O. ATWATER, *Middletown.*

1885.

*Appointed by Governor and Senate :*

EDWIN HOYT, *New Canaan.*

1886.

H. L. DUDLEY, *New London.*

1887.

*Appointed by Board of Agriculture :*

T. S. GOLD, *West Cornwall.*

1886.

*Executive*

*Appointed by Governing Board of Sheffield Scientific School :*

*Committee.*

W. H. BREWER, *New Haven, Secretary and Treasurer.*

1887.

*Ex-officio.*

S. W. JOHNSON, *New Haven, Director.*

---

*Chemists.*

E. H. JENKINS, *Ph.D., Vice Director.*

E. H. FARRINGTON, *B.S.*

A. L. WINTON, *Jr., Ph.B.*

*In charge of Buildings and Grounds.*

CHARLES J. RICE.

# ANNOUNCEMENT.

---

THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION was established in accordance with an Act of the General Assembly, approved March 21, 1877, "for the purpose of promoting Agriculture by scientific investigation and experiment."

The Station is prepared to analyze and test fertilizers, cattle-food, seeds, soils, waters, milks, and other agricultural materials and products, to identify grasses, weeds, and useful or injurious insects, and to give information on the various subjects of Agricultural Science, for the use and advantage of the Citizens of Connecticut.

The Station makes analyses of Fertilizers, Seed-Tests, &c., &c., for the Citizens of Connecticut, *without charge*, provided—

1. That the results are of use to the public and are free to publish.
2. That the samples are taken by *consumers* from stock now in the market, and in accordance with the Station instructions for sampling.
3. That the samples are fully described on the Station "Forms for Description."

All other work proper to the Experiment Station that can be used for the public benefit will be made without charge. Work done for the use of individuals will be charged for at moderate rates. The Station will undertake no work, the results of which are not at its disposal to use or publish, if deemed advisable for the public good. See p. 17.

Results of analysis or investigation that are of general interest will be published in Bulletins, of which copies are sent to each Post Office in this State, and will be summed up in the Annual Reports made to the Legislature.

The officers of the Station will take pains to obtain for analysis samples of all the commercial fertilizers sold in Connecticut; but the organized coöperation of the farmers is essential for the full and timely protection of their interests. Farmers' Clubs and like Associations can efficiently work with the Station for this purpose, by sending in samples early during each season of trade.

It is the wish of the Board of Control to make the Station as widely useful as its resources will admit. Every Connecticut citizen who is concerned in agriculture, whether farmer, manufacturer, or dealer, has the right to apply to the Station for any assistance that comes within its province to render, and the Station will respond to all applications as far as lies in its power.

☞ Instructions and Forms for taking samples, and Terms for testing Fertilizers, Seeds, etc., for private parties, sent on application.

☞ Parcels by Express, to receive attention, should be prepaid, and all communications should be directed, not to individual officers, but simply to the

AGRICULTURAL EXPERIMENT STATION,  
NEW HAVEN, CONN.

☞ Station Grounds, Laboratory and Office are on Suburban St., between Whitney Avenue and Prospect St.,  $1\frac{1}{2}$  miles North of City Hall. Suburban St. may be reached by Whitney Lake Horse Cars, which leave corner of Chapel and Church Sts. each hour and half hour.

☞ The Station has Telephone connection and may be spoken from the Central Telephone Office, 346 State St., or from Peck & Bishop's Office in Union R. R. Depot.

# CONTENTS.

---

Officers of the Station .....	Page 2
Announcement .....	3
Table of Contents .....	4
Report of the Board of Control .....	7
Report of Treasurer .....	8
Report of the Director .....	9
Summary of Station Work .....	9
Station Bulletins .....	10
Fertilizer Law, Explanations .....	11
Text of the Law .....	12
Observance of the Law .....	15
Fertilizers .....	17
Instructions for Sampling .....	19
Form for Description of Sample .....	21
Explanations of Fertilizer-Analysis and Valuation .....	23
Nitrogen, Organic .....	23
Ammonia .....	23
Nitric Acid .....	23
Phosphoric Acid, Soluble .....	23
"        "    Reverted .....	23
"        "    Insoluble .....	24
Potash .....	24
Valuation defined .....	24
Trade Values of Fertilizing Ingredients in Raw Materials and Chemicals .....	25
Trade Values in Superphosphates, Specials and Mixed Fer- tilizers .....	26
To obtain the Valuation of a Fertilizer .....	27
Uses of Valuation .....	27
Agricultural Value of Fertilizer .....	28

## Report of the Director: Fertilizers—

	Page
Analyses and Valuations of Fertilizers .....	28
Classification of Fertilizers Analyzed .....	28
Phosphate Rock .....	29
Phosphatic Guano .....	30
Superphosphates, Plain (Non-Nitrogenous) .....	31
“    Ammoniated (Nitrogenous) and Guanos ..	34
“    Tables of Analyses and Valuations..	37-44
Comparison of Superphosphates of	
the same Brand .....	45
Home-made Phosphates .....	47
Special Manures .....	50
Table of Comparison of Special Manures .....	52
Table of Analyses and Valuations .....	54-57
Bone Manures .....	58
Tables of Analyses and Valuations .....	59-62
Dry Ground Fish .....	63
Nitrate of Soda .....	65
Sulphate of Ammonia .....	66
Meat and Plaster .....	66
Linseed Meal and Castor Pomace .....	67
Potash Salts .....	68
Cotton Hull Ashes .....	70
Wood Ashes .....	70
Hen Manure .....	71
Elephant's Dung .....	71
Damaged Grain .....	72
Paper Mill Waste .....	73
Marine Mud .....	73
Swamp Muck .....	74
Marl .....	75
Land Plaster .....	75
Pollard's Special Fertilizers .....	76
Review of the Fertilizer Market .....	78
Organic Nitrogen .....	78
Nitrogen of Ammonia Salts .....	79
“    Nitrate of Soda .....	80



## 6 CONNECTICUT AGRICULTURAL EXPERIMENT STATION.

Report of the Director: Review of the Fertilizer Market—	Page
Phosphatic Materials.....	80
Actual Potash.....	81
Explanations of Market Quotations.....	83
Fluctuations in price of Fertilizing Materials during the last 3½ years..	85
Answers to Correspondents with Regard to Fertilizers.....	86
Value of Gas Lime.....	86
Causes of Failure in the Use of Fertilizers .....	86
The Supply of Lime for the Tobacco Crop .....	87
What is Kieserite?.....	89
Complete Analysis of a Superphosphate.....	89
On Sampling Fertilizers for Analysis .....	90
Analyses of the Ash of Healthy and Diseased Peach Wood .....	93
Fertilizing Swamp Muck Land.....	95
Analyses of Tobacco Leaf.....	96-104
Tobacco Stalks .....	104
Analyses of Feeding Stuff.....	106
Maize Kernel .....	106
Beets and Potatoes.....	107
Linseed Meal.....	108
Middlings .....	108
Wheat Bran .....	109
Hay and Straw .....	109
Maize Ensilage .....	110
"The Concentrated Feed".....	111
Table of the Composition of American Feeding Stuff.....	113-118
Seeds .....	119
Report of the Building Committee.....	121

# REPORT OF THE BOARD OF CONTROL.

---

*To the General Assembly of the State of Connecticut:*

The Board of Control of THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION herewith submits to your Honorable Body, the Annual Reports of the Director, the Treasurer, and Building Committee, made to the Board at its Annual Meeting at Hartford, January 20, 1885.

The buildings of the Station have been completed within the year, and the special appropriation made by the General Assembly in 1882, for the purpose of providing land and buildings for the Station, is expended. The report of the Building Committee gives the details regarding this expenditure. There has been no interruption in the work of the Station during the year.

The provisions of the new Fertilizer law have increased the income of the Station, and very materially increased its work in the direction of fertilizer analyses, their collection and oversight, and the correspondence incident to requirements of the law. As a knowledge of the Station and its work becomes more generally diffused among the people, there is a continually increasing demand for such help as the Station can give, and the sphere of its usefulness is enlarging from year to year.

By special resolution, the General Assembly has in preceding years ordered the printing of extra copies of this report, a large share of which have been distributed in advance of the regular edition. Such copies have cost less than ten cents each, and the demand for them makes similar action desirable this year.

HENRY B. HARRISON,

*President.*

WM. H. BREWER,

*Secretary.*

# REPORT OF THE TREASURER.

---

WM. H. BREWER, *in account with the Connecticut Agricultural Experiment Station.*

## RECEIPTS.

Balance from account of 1883 .....	\$3.44
Analysis fees .....	3,845.00
State Treasurer, Annual Appropriation .....	8,000.00
Miscellaneous receipts .....	3.88
	<hr/> \$11,852.32

## PAYMENTS.

Salaries .....	\$6,625.54
Laboratory and Experiments .....	771.47
Repairs and improvements on Laboratory and House .....	1,052.21
The Grounds and Establishment .....	579.81
Fuel .....	287.00
Gas .....	285.34
Water .....	132.00
Insurance .....	54.00
Collecting Fertilizers .....	88.83
Traveling Expenses of the Board .....	38.20
Printing .....	349.95
Stationery .....	27.67
Postage .....	139.79
Telephone .....	100.10
Library .....	292.35
Miscellaneous Sundries .....	194.28
Balance on hand .....	833.78
	<hr/> \$11,852.32

There is due the Station \$110 on analysis fees. The above account is for the State fiscal year ending November 30, 1884. The report of expenditures from the special appropriation for buying a lot and erecting buildings for the Station, may be found in the report of the building committee (see page 121).

WM. H. BREWER, *Treasurer.*

## REPORT OF THE DIRECTOR.

---

The work of this Station has gone on without interruption since the time covered by the last report.

As usual, the analysis of fertilizers and fertilizing materials has occupied its working force through the greater part of the year, in order to meet the increased demand for such work. One hundred and seventeen different brands of fertilizers have been legally offered for sale in the State during the year, an increase of twenty-four over the preceding year. As required by law, one or more analyses of each of these brands has been made and published, except in the few cases where the goods were not found on sale in the State by the agents of the Station, and at the same time the manufacturer had failed to comply with the provision of the law, which requires that a sealed sample shall be deposited with the director of the Station. A considerable number of home-made fertilizers and waste products, used as manure, have also been examined, making the total number of fertilizer analyses two hundred and seventy-two, an increase of fifty-three over last year.

Twelve samples of feeding stuff have been analyzed, and in connection with this work all the analyses of American feeding stuffs published in this country during the year, which were accessible, have been incorporated in a table, giving the average composition of one hundred different materials, which will be found in the following pages.

Forty-five samples of seeds have been tested in the laboratory and garden.

Fifteen samples of milk have been examined, partly on behalf of creameries, partly with reference to the quality of the milk supply of our towns. Details are not necessary. The milk was good in every case.

Analyses of the ash of eight samples of tobacco and of one sample of tobacco stalks are given and discussed on subsequent pages.

Besides the above a large amount of work has been done which cannot well be classified or here recorded, in answer to the questions of correspondents, in testing analytical methods, in controlling the accuracy of the laboratory work, etc.

The Bulletins of the Station have been five in number, issued in April, May, July, September and October, making up in all sixty-two printed pages. The object of these Bulletins is to place in the hands of those concerned the results of the Station work as promptly as possible. During the year the demand for them has considerably increased.

As required by law, a package of each Bulletin is mailed to every post-office in the State. The package is directed to the postmaster, with a request to distribute to farmers.

The Bulletins are also regularly sent to every newspaper in the State and to the Secretary of each Agricultural society and Farmers' club.

The Bulletins will be regularly sent, also, on application, to any address in Connecticut.

To citizens of other States remitting fifty cents, the publications of the current year, including Bulletins and Annual Report, will be mailed as they appear.

The clerical work of the Station has included the writing of over nine hundred letters, besides one or more reports on each fertilizer and fodder analyzed, and the work incident to the compilation of the Bulletins and Reports.



## THE CONNECTICUT FERTILIZER LAW.

---

The General Assembly at its session in 1882 passed a new Fertilizer Law, which went into effect September 1, 1882, and which repeals and takes the place of all previous legislation on this subject in this State.

Since a full understanding of the provisions and penalties of this law is important to all parties who buy or sell commercial fertilizers, attention is specially directed to the following points:

1. In case of fertilizers that retail at ten dollars or more per ton, the law holds the SELLER responsible for *affixing a correct label or statement* to every package or lot sold or offered, as well as for the *payment of an analysis fee* of ten dollars for each fertilizing ingredient which the fertilizer contains or is claimed to contain, *unless* the MANUFACTURER OR IMPORTER shall have provided labels or statements and shall have paid the fee. Sections 1 and 3.

2. The law also requires, in case of any fertilizer selling at ten dollars or more per ton, that a *certified statement* of composition, net weight in package, etc., shall be filed with the Director of the Experiment Station, and that a *sealed sample* shall be deposited with him by the MANUFACTURER OR IMPORTER. Section 2.

3. It is also provided that EVERY PERSON in the State, who sells *any commercial fertilizer of whatever kind or price* shall annually report certain facts to the Director of the Experiment Station, and on demand of the latter shall deliver a sample for analysis. Section 4.

4. All "CHEMICALS" that are applied to land, such as : Muriate of Potash, Kainite, Sulphate of Potash and Magnesia, Sulphate of Lime (Gypsum or Land Plaster), Sulphate of Ammonia, Nitrate of Potash, Nitrate of Soda, etc.—are considered to come under the law as "Commercial Fertilizers." Dealers in these chemicals must see that packages are suitably labeled. They must also report them to the Station, and see that the analysis fees are duly paid, in order that the Director may be able to discharge his duty as prescribed in Section 9 of the Act.

Here follows the full text of the law, with explanatory footnotes.

## AN ACT CONCERNING COMMERCIAL FERTILIZERS.

GENERAL ASSEMBLY,  
January Session, A. D. 1882.

*Be it enacted by the Senate and House of Representatives in General Assembly convened:*

*Printed statement to be affixed to all packages and to go with all lots.*

SECTION 1. Every person or company who shall sell, offer, or expose for sale, in this State, any commercial fertilizer or manure, the retail price of which is ten dollars, or more than ten dollars per ton, shall affix conspicuously to every package thereof a plainly printed statement, clearly and truly certifying the number of net pounds of fertilizer in the package, the name, brand, or trade-mark under which the fertilizer is sold, the name and address of the manufacturer, the place of manufacture and the chemical composition of the fertilizer, expressed in the terms and manner approved and currently employed by the Connecticut Agricultural Experiment Station.\*

If any such fertilizer be sold in bulk, such printed statement shall accompany and go with every lot and parcel sold, offered, or exposed for sale.

*Before sale certified copies of statement, and Sealed Sample to be deposited with Director.*

SEC. 2. Before any commercial fertilizer, the retail price of which is ten dollars, or more than ten dollars per ton, is sold, offered, or exposed for sale, the manufacturer, importer, or party who causes it to be sold, or offered for sale, within the State of Connecticut, shall file with the Director of the Connecticut Agricultural Experiment Station two certified copies of the statement named in section one of this act, and shall deposit with said

\* A statement of the per cents. of Nitrogen, Phosphoric Acid ( $P_2O_5$ ) and Potash ( $K_2O$ ), and of their several states or forms, will suffice in most cases. Other ingredients may be named if desired.

In all cases the per cent. of *nitrogen* must be stated. Ammonia may also be given when actually present in ammonia salts, and "ammonia equivalent to nitrogen" may likewise be stated.

The per cent. of soluble and reverted phosphoric acid may be given separately or together, and the term "available" may be used in addition to, but not instead of soluble and reverted.

Insoluble phosphoric acid may be stated or omitted.

In case of Bone, Fish, Tankage, Dried Meat, Dried Blood, etc., the chemical composition may take account of the two ingredients: Nitrogen, Phosphoric Acid.

For Potash Salts give always the per cent. of Potash (potassium oxide); that of Sulphate of Potash or Muriate of Potash may also be stated.

The chemical composition of other fertilizers may be given as found in the Station Reports.

director a sealed glass jar or bottle containing not less than one pound of the fertilizer, accompanied by an affidavit that it is a fair average sample thereof.\*

SEC. 3. The manufacturer, importer, agent, or seller of any commercial fertilizer, the retail price of which is ten dollars or more than ten dollars per ton, shall pay on or before the first of May, annually, to the Director of the Connecticut Agricultural Experiment Station, an analysis fee of ten dollars for each of the fertilizing ingredients† contained or claimed to exist in said fertilizer: *provided*, that whenever the manufacturer or importer shall have paid the fee herein required for any persons acting as agents or sellers for such manufacturer or importer, such agents or sellers shall not be required to pay the fee named in this section.

*Analysis Fee to be paid annually on or before May 1st.*

SEC. 4. Every person in this State who sells, or acts as local agent for the sale of any commercial fertilizer of whatever kind or price, shall annually, or at the time of becoming such seller or agent, report to the Director of the Connecticut Agricultural Experiment Station his name, residence, and post-office address, and the name and brand of said fertilizer, with the name and address of the manufacturer, importer, or party from whom such fertilizer was obtained, and shall, on demand of the Director of the Connecticut Agricultural Experiment Station, deliver to said director a sample suitable for analysis of any such fertilizer or manure then and there sold or offered for sale by said seller or agent.‡

*Yearly Report to Station of Dealers or Agents.*

SEC. 5. No person or party shall sell, offer, or expose for sale, in the State of Connecticut, any pulverized leather, raw, steamed, roasted, or in any form, as a fertilizer or as an ingredient of any fertilizer or manure, without explicit printed certificate of the fact, such certificate to be conspicuously affixed to every package of such fertilizer or manure, and to accompany and go with every parcel or lot of the same.

*Leather.*

\* The analysis of samples sent in accordance with section two is discretionary with the Station. Such samples are intended for preservation as manufacturers' standards.

† The Station understands "the fertilizing ingredients" to be those whose determination in an analysis is necessary for a valuation, viz: Nitrogen, Phosphoric acid and Potash. The analysis-fees in case of any fertilizer will therefore be ten, twenty or thirty dollars, according as one, two or three of these ingredients are contained or claimed to exist in the fertilizer.

On receipt of statements, samples and analysis-fees, the Station will issue Certificates of Compliance with the law.

‡ Blanks for Dealers' Reports will be mailed to applicants.



Fish-guano, &c. SEC. 6. Every manufacturer of fish guano, or fertilizers of which the principal ingredient is fish or fish-mass from which the oil has been extracted, shall, before manufacturing or heating the same, and within thirty-six hours from the time such fish or mass has been delivered to him, treat the same with sulphuric acid or other chemical, approved by the director of said experiment station, in such quantity as to arrest decomposition: *provided, however,* that in lieu of such treatment such manufacturers may provide a means for consuming all smoke and vapors arising from such fertilizers during the process of manufacture.

Fines. SEC. 7. Any person violating any provision of the foregoing sections of this act shall be fined one hundred dollars for the first offense, and two hundred dollars for each subsequent violation.

Fertilizers for private use. SEC. 8. This act shall not affect parties manufacturing, importing, or purchasing fertilizers for their own private use, and not to sell in this State.

Director's duties and authority. SEC. 9. The director of the Connecticut Agricultural Experiment Station shall pay the analysis-fees received by him into the treasury of the station, and shall cause one or more analysis of each fertilizer to be made and published annually. Said director is hereby authorized, in person or by deputy, to take samples for analysis from any lot or package of manure or fertilizer which may be in the possession of any dealer.

Bulletins. SEC. 10. The director of the Connecticut Agricultural Station shall, from time to time, as bulletins of said station may be issued, mail or cause to be mailed two copies, at least, of such bulletins to each post-office in the State.

Repeal of former acts. SEC. 11. Title sixteen, chapter fifteen, sections fifteen and sixteen, and title twenty, chapter twelve, section five of the general statutes, and chapter one hundred and twenty of the public acts of 1881, being an act concerning commercial fertilizers, are hereby repealed.

SEC. 12. This act shall take effect on the first day of September, 1882.

It will be noticed that the State exacts no license tax either for making or dealing in fertilizers. For the safety of consumers and the benefit of honest manufacturers and dealers, the State requires that it be known what is offered for sale, and whether fertilizers are what they purport to be. With this object in view the law provides, in section 9, that all fertilizers be analyzed and it requires the parties making or selling them to pay for these analyses in part; the State itself paying in part by maintaining the Experiment Station.

## OBSERVANCE OF THE FERTILIZER LAW.

In the following list are given the names of those parties who have paid the analysis fees as required by the Fertilizer Law, and the brands on which analysis fees have been paid for the year ending April 30th, 1885.

<i>Firm.</i>	<i>Brand of Fertilizer.</i>
Anderson, W. H., Putnam, Conn.	Ground Bone.
Baker, H. J. & Bro., 215 Pearl St., New York.	Castor Pomace.
	"A. A." Ammoniated Superphosphate.
	Pelican Bone Phosphate.
	Special Corn Fertilizer.
	" Potato Fertilizer.
	" Oat Manure.
	" Tobacco Manure.
	" Grass "
Bennett, P. W., Rockfall, Conn.	Ground Bone.
Bosworth Bros., Putnam, Conn.	Superphosphate of Lime.
	Potato Phosphate.
	Ground Bone.
Bowker Fertilizer Co., 43 Chatham St., Boston, Mass.	Stockbridge Grain Manure.
	" Forage Crop Manure.
	" Vegetable Manure.
	Bowker's Hill and Drill Phosphate.
	" Fish and Potash.
	" Dissolved Bone.
	" Dry Fish.
	" Kainit.
Bradley Fertilizer Co., 27 Kilby St., Boston, Mass.	Bradley's Superphosphate.
	B. D. Sea-Fowl Guano.
	Original Coe's Superphosphate.
	Circle Brand Bone.
Brown, R. B., Oil Co., St. Louis, Mo.	I. X. L. Castor Pomace.
Coe, E. Frank, 16 Burling Slip, New York.	Ammoniated Bone Superphosphate.
	Alkaline Bone.
	Ground Bone.
Coe, Russel, Linden, N. J.	Ammoniated Bone Superphosphate.
	Fish and Potash.
	Special Favorite.
	Potato Manure.
Clark's Cove Guano Co., New Bedford, Mass.	Great Planet "A."
Collier White Lead & Oil Co., St. Louis, Mo., by F. Ellsworth, Hartford.	Bay State Fertilizer.
Common Sense Fertilizer Mfg. Co., 42 Congress St., Boston, Mass.	Castor Pomace.
Peter Cooper's Glue Factory, 17 Burling Slip, New York.	Common Sense Fertilizer. No. 2.
Crocker, L. L., Buffalo Fertilizer and Chemical Works, Buffalo, N. Y.	Bone Dust.
	Ammoniated Bone Superphosphate.
	Potato, Hop and Tobacco Phosphate.
	Superphosphate, No. 2.
Curtis, J. G., Elliott, Conn.	Reliable Superphosphate.
Darling, L. B., Fertilizer Co., Pawtucket, R. I.	Animal Fertilizer.
Dickinson, David, Middle Haddam, Conn.	Ground Bone.
Glidden & Curtis, Boston, Mass.	Superphosphate of Lime.
	Soluble Pacific Guano.



<i>Firm.</i>	<i>Brand of Fertilizer.</i>
W. Burr Hall, Wallingford, Conn.	Ground Bone.
Harris, Geo. H. & Son, Eagleville, Conn.	Meat and Plaster.
Hurtado & Co., 16 and 18 Exchange Place, New York.	Pure Ground Bone.
Judson & Sparrow, 38 South Market St., Boston, Mass.	" Bone Phosphate.
Lister Brothers, Newark, N. J.	Peruvian Guano, Lobos.
	" " Guaranteed.
	" " Standard.
	Bone and Potash Phosphate.
	Standard Ammoniated Dissolved Bone.
	Special Potato Fertilizer.
	" Corn "
	Ground Bone.
Lombard & Mathewson, Warrenville, Conn.	Standard Superphosphate.
McNamara, M., Trumbull, Conn.	Superphosphate.
Mapes' Formula and Peruvian Guano Co., 158 Front St., New York.	Ground Bone.
	Ground Bone.
	The Mapes' Potato Manure.
	" Corn "
	" Complete " for Light Soil.
	" Tobacco " Conn. Brand.
	" Tobacco " for use with stems.
	" Grass and Grain, Spring Top Dressing.
	The Mapes' Complete Manure, "A" Brand.
	Plain Superphosphate, High Grade.
	Nitrate of Soda.
	Muriate of Potash.
G. W. Miles Co., Milford, Conn.	I. X. L. Bone Superphosphate.
Miller, G. W., Middlefield, Conn.	Fish and Potash Fertilizer.
	Raw Bone Phosphate.
	Ground Bone.
	Standard Superphosphate.
Mitchell, A., Linden, N. J.	Chittenden's Complete Fertilizer for Roots.
National Fertilizer Co., Bridgeport, Conn.	Chittenden's Complete Fertilizer for Grain.
	Chittenden's Complete Fertilizer for Tobacco.
	Chittenden's Fish and Potash.
	" Ammoniated Bone Superphosphate.
	Cooke's Blood Guano.
	" Dissolved Ground Bone.
	Standard Ammoniated Superphosphate.
New Haven Fertilizer Co., New Haven, Conn.	Pure Ground Bone.
Peck Bros., Northfield, Conn.	Fish Guano.
Preston Fertilizer Co., Greenpoint, L. I.	Ammoniated Superphosphate.
	Ground Bone.
Quinnipiac Fertilizer Co., New London, Conn.	Quinnipiac Phosphate.
	" Extra Phosphate.
	Dry Ground Fish.
	Fish and Potash, Crossed-fishes Brand.
	" " Plain Brand.
	Matchless Tobacco Manure.
Read & Co., New York.	Farmers' Friend Fertilizer.

<i>Firm</i>	<i>Brand of Fertilizer.</i>
Rogers & Hubbard Co., Middletown, Conn.	Pure Raw Knuckle Bone "A." " " "Meal."
Sanford, Charles, Redding Ridge, Conn.	Ground Bone "A. X."
Shoemaker, M. L. & Co., Philadelphia, Pa., by F. Ellsworth, Hartford.	Bone Sawdust.
Slade, F. C., Oakville, Conn.	Bone Superphosphate.
Smith, Edmund, South Canterbury, Conn.	Swift Sure Superphosphate.
Stearns & Co., 149 Front St., New York.	" Bone Meal.
	Ground Bone.
	Ground Bone.
	Eagle Brand Fish and Potash.
	Dry Ground Fish.
	Ammoniated Bone Superphosphate.
	Castor Pomace.
St. Louis Lead and Oil Co., St. Louis, Mo., by F. Ellsworth, Hartford.	
Thomson, Paul, Hartford, Conn.	Charter Oak Fertilizer.
Williams, Clark & Co., 101 Pearl St., New York.	Americus Superphosphate.
	Fish and Potash.
	Acorn Brand Kainite.
	" Muriate Potash.
Wilcox, L. & Co., Mystic Bridge, Conn.	Wilcox Prepared Fertilizer.
	Acidulated Fish Guano, Ground.
	Dry Ground Fish Guano.

## ANALYSES OF FERTILIZERS.\*

In respect to its terms, the Station makes *two classes* of analyses of fertilizers and fertilizing materials: the first for the benefit of farmers, gardeners, and the public generally; the second for the private use of manufacturers and dealers. Analyses of the *first class* are made gratuitously, and the results are published as speedily and widely as possible for the guidance of purchasers and consumers. Those of the *second class* are charged for at moderate rates, and their results are not published in a way to interfere with their legitimate private use. The Station, however, distinctly reserves the liberty to use at discretion, for the public benefit, all results obtained in its laboratory, and in no case will enter into any privacy that will work against the public good.

During 1884, two hundred and seventy-two (272) samples of fertilizers have been analyzed. Of these, 59 were examined for private parties, and the remainder for the general use of the citizens of the State.

\*The matter of this and several subsequent pages, explanatory of the sampling and valuation of fertilizers, is copied, with a few appropriate alterations, from the Report for 1883. This repetition appears to be necessary for the use of readers who have not seen former Reports.

Sixty-two samples analyzed for the public benefit have been sent in by purchasers and consumers. The rest have been supplied by agents of the Station who during the spring and early summer endeavored to visit all sections of the State, to take one or more samples from every brand of fertilizer offered for sale in the State, and to take them from the stock of dealers in remote places as well as from centers of trade.

The Station agents are instructed when drawing samples to open at least three packages of each brand of goods in every case, and if the number of packages is large, to take a portion from every tenth one, by means of a sampling tube, which withdraws a section or core through the entire length of the package.

The greatest care is necessary in sampling fertilizers that the small sample taken shall accurately represent the whole stock from which it is drawn. Otherwise serious injustice may be done.

During the year the Station has had to reject a number of samples sent in for analysis by purchasers on account of evident carelessness in drawing them.

The Station none the less desires the coöperation of farmers and Farmers' clubs in calling attention to new brands of fertilizers and in securing samples of all goods offered for sale. All such samples are understood to be taken in accordance with the printed instructions which the Station supplies to all applicants. Here follows a copy of these instructions.

THE CONNECTICUT  
AGRICULTURAL EXPERIMENT STATION.

---

INSTRUCTIONS FOR SAMPLING COMMERCIAL FERTILIZERS.

The *valuation* of a high-priced Fertilizer requires the amounts *per cent.* of its principal fertilizing elements to be known. Chemical analysis of a small sample, so taken as to fairly represent a large lot, will show the composition of the lot. The subjoined instructions, if faithfully followed, will insure a fair sample. Especial care should be observed that the sample neither gains nor loses *moisture* during the sampling or sending, as may easily happen in extremes of weather, or from even a short exposure to sun and wind, or from keeping in a poorly closed vessel.

1. Provide a tea cup, some large papers, and for each sample a glass fruit-can or tin box, holding about *one quart*, that can be tightly closed—all to be clean and dry.

2. Weigh separately at least three (3) average packages (barrels or bags) of the fertilizer, and enter these *actual weights* in the "Form for description of Sample."

3. Open the packages that have been weighed, and mix well together the contents of each, down to one-half its depth, emptying out upon a clean floor if needful, and crushing any soft, moist lumps in order to facilitate mixture, but leaving hard, dry lumps unbroken, so that the sample shall exhibit the texture and mechanical condition of the fertilizer.

4. Take out five (5) equal cupfulls from different parts of the mixed portions of each package. Pour them (15 in all) one over another upon a paper, intermix again thoroughly but quickly to avoid loss or gain of moisture, fill a can or box from this mixture, close tightly, *label plainly*, and send, charges prepaid, to

THE CONN. AGRICULTURAL EXPERIMENT STATION,  
New Haven, Conn.

---

The foregoing instructions may be over-nice in some cases, but they are not intended to take the place of good sense on the part of those who are interested in learning the true composition of a fertilizer. Any method of operating that will yield a *fair sample* is good enough.



In case of a fine, uniform and moist or coherent article, a butter-tryer or a tin-tube, like a dipper handle, put well down into the packages, in a good number of places, will give a fair sample with great ease. With dry, coarse articles, such as ground bone, there is liable to be a separation of coarse and fine parts on handling. Moist articles put up in bags or common barrels may become dry on the outside. It is in these cases absolutely necessary to mix thoroughly the coarse and fine, the dry and the moist portions before sampling. Otherwise the analysis will certainly misrepresent the article whose value it is intended to fix.

The quantity sent should not be too small. When the material is fine and uniform, and has been carefully sampled, a pint may be enough, but otherwise and especially in the case of ground bone, which must be mechanically analyzed, the sample should not be *less than one quart*.

It is also important that samples for analysis should be taken at the time when the fertilizer is purchased, and immediately dispatched to the Station. Moist fish, blood or cotton seed meal will soon decompose and lose ammonia, if bottled and kept in a warm place. Superphosphates containing much nitrogen will suffer reversion of their soluble phosphoric acid under similar circumstances. Most of the moist fertilizers will lose water unless tightly bottled, but some of the grades of potash salts will gather moisture from the air and become a slumpy mass if not thoroughly protected.

These changes in the composition of a sample not suitably preserved must invalidate any conclusions from its analysis, and work serious injustice either to the manufacturer or to the consumer.

It doubtless often happens that a purchaser on laying in a stock of fertilizers decides that he will not then trouble the Station to analyze the goods he has obtained, but will set aside samples which he can send for examination in case the crops report adversely as to their quality. It is always better to send all samples at once to the Station, where they can be directly analyzed or so prepared that they will keep without chemical change.

With the Instructions for Sampling, the Station furnishes a blank form for Description of Sample, a copy of which is here given.



THE CONNECTICUT  
AGRICULTURAL EXPERIMENT STATION,

NEW HAVEN, CONN.

---

FORM FOR DESCRIPTION OF SAMPLE.

Station No. .... Rec'd at Station, ..... 18

Each sample of Fertilizer sent for gratuitous analysis must be accompanied by one of these Forms, with the blanks *below* filled out fully and legibly.

The filled out Form, if wrapped up with the sample, will serve as a label.

Send with each sample a specimen of any printed circular, pamphlet, analysis or statement that accompanies the fertilizer or is used in its sale.

Brand of Fertilizer, .....

Name and address of Manufacturer, .....

.....  
Name and address of Dealer from whose stock this sample is taken, .....

Date of taking this sample, .....

Selling price per ton or hundred, bag or barrel, .....

Selling weight claimed for each package weighed, .....

Actual weight of packages opened, .....

Here write a copy of any analysis or guaranteed composition that is fixed to the packages.

.....  
Signature and P. O. address of person taking and sending the sample.  
.....

On receipt of any sample of fertilizer from the open market, the filled out "Form for Description" which accompanies it is filed in the Station's Record of Analyses, and remains there as a voucher for the authenticity of the sample and for the fact that it has been taken fairly, or, at least, under suitable instructions. It is thus sought to insure that manufacturers and dealers shall not suffer from the publication of analyses made on material that does not correctly represent what they have put upon the market.

The "Form for Description," when properly filled out, also, contains all the data of cost, weight, etc., of a fertilizer which are necessary for making, with help of the analysis, a valuation of its fertilizing elements, and estimating the fairness of its selling price. Neglect to give full particulars occasions the Station much trouble, and it is evident that want of accuracy in writing up the description may work injustice to the manufacturers or dealers, as well as mislead consumers. It is especially important that the *brand* of a fertilizer and its *selling price* shall be correctly given. The price should be that actually charged by the dealer of whom it is bought, and if the article be purchased in New York or other distant market, that fact should be stated, and the cost at the nearest point to the consumer, on rail or boat, should be reported also.

In all cases, when possible, *ton prices* should be given, and if the sale of an article is only by smaller quantities, that fact should be distinctly mentioned.

Samples are analyzed as promptly as possible in the order in which they are received. As soon as an analysis is completed a copy of it is sent to the party who furnished the sample and also to the manufacturer, in order that there may be opportunity for explanation or protest, if desirable, before the results are published in the Bulletin.

With the analysis there is sent to the party furnishing the sample a printed page of "Explanations," intended to embody the principles and data upon which the valuation of fertilizers is based.

These Explanations are essential to a correct understanding of the analyses that are given on subsequent pages, and are, therefore, reproduced here, as follows :

EXPLANATIONS CONCERNING THE ANALYSIS OF FERTILIZERS AND  
THE VALUATION OF THEIR ACTIVE INGREDIENTS.

---

REVISED.

---

*Nitrogen* is commercially the most valuable fertilizing element. *Organic nitrogen* is the nitrogen of animal and vegetable matters. Some forms of organic nitrogen, as those of blood and meat, are highly active as fertilizers; others, as found in leather and peat, are comparatively slow in their effect on vegetation, unless these matters are chemically disintegrated. *Ammonia* and *nitric acid* are results of the decay of *organic nitrogen* in the soil and manure heap, and are the most active forms of Nitrogen. They occur in commerce—the former in sulphate of ammonia, the latter in nitrate of soda. 17 parts of ammonia or 66 parts of pure sulphate of ammonia contain 14 parts of nitrogen. 85 parts of pure nitrate of soda also contain 14 parts of nitrogen.

*Soluble Phosphoric acid* implies phosphoric acid or phosphates that are freely soluble in water. It is the characteristic ingredient of Superphosphates, in which it is produced, by acting on “insoluble” or “reverted” phosphates, with oil of vitriol. Once well incorporated with the soil it gradually becomes reverted phosphoric acid.

*Reverted (reduced or precipitated) Phosphoric acid* means strictly, phosphoric acid that was once easily soluble in water, but from chemical change has become insoluble in that liquid. In present usage the term signifies the phosphoric acid (of various phosphates) that is freely taken up by strong solution of ammonium citrate, which is therefore used in analysis to determine its quantity. “Reverted phosphoric acid” implies phosphates that are readily assimilated by crops.

Recent investigation tends to show that soluble and reverted phosphoric acid are on the whole about equally valuable as plant-food and of nearly equal commercial value. In some cases, indeed, the soluble gives better results on crops, in others the reverted is superior. In most instances there is probably little to choose between them.

*Insoluble Phosphoric acid* implies various phosphates not soluble in water or ammonium citrate. In some cases the phosphoric acid is too insoluble to be readily available as plant food. This is especially true of Canada Apatite. Bone black, bone-ash, South Carolina Rock and Navassa Phosphate when in coarse powder are commonly of little repute as fertilizers though good results are occasionally reported from their use. When *very finely pulverized* ("floats") they more often act well, especially in connection with abundance of decaying vegetable matters. The phosphate of raw bones is nearly insoluble, because of the animal matter of the bones, which envelopes it; but when the latter decays in the soil, the phosphate remains in essentially the "reverted" form.

*Potash* signifies the substance known in chemistry as potassium oxide, which is the valuable fertilizing ingredient of "potashes" and "potash salts." It should be soluble in water and is most costly in the form of sulphate, and cheapest in the shape of muriate (potassium chloride).

*The Valuation of a Fertilizer*, as practised at this Station, signifies finding *the worth in money or trade-value, of its fertilizing ingredients*. This value, it should be remembered, is *not necessarily proportional to its fertilizing effects* in any special case.

Plaster, lime, stable manure and nearly all of the less expensive fertilizers have variable prices, which bear no close relation to their chemical composition, but guanos, superphosphates and similar articles, for which \$30 to \$60 per ton are paid, depend chiefly for their trade-value on the three substances, *nitrogen*, *phosphoric acid* and *potash*, which are comparatively costly and steady in price. The money-value per pound of these ingredients is reckoned from the current market prices of the standard articles which furnish them to commerce.

The consumer, in estimating the reasonable price to pay for high-grade fertilizers, should add to the *Trade Value of the above-named Ingredients*, a suitable margin for the expenses of manufacture, etc., and for the convenience or other advantage incidental to their use.



The average Trade-values or cost in market, per pound, of the ordinarily occurring forms of nitrogen, phosphoric acid and potash, as recently found in the New England, New York and New Jersey markets, are as follows:—

These Trade-values have been agreed upon by the Experiment Stations of Connecticut, New Jersey and Massachusetts for use in their several states.

# TRADE VALUES OF FERTILIZING INGREDIENTS IN RAW MATERIALS AND CHEMICALS FOR 1884.

	Cents per lb.
Nitrogen in ammonia salts,-----	22
“ in nitrates,-----	18
Organic nitrogen in dried and fine ground fish,-----	20
“ “ in guanos, dried and fine ground blood and meat,-----	18
“ “ in cotton seed, linseed meal and in castor pomace,-----	18
“ “ in fine ground bone,-----	18
“ “ in fine medium bone,-----	16
“ “ in medium bone,-----	14
“ “ in coarse medium bone,-----	12
“ “ in coarse bone, horn shavings, hair and fish scrap,-----	10
Phosphoric acid, soluble in water,-----	10
“ “ soluble in ammonium citrate,*-----	.9
“ “ insoluble, in dry fine ground fish and in fine bone,-----	6
“ “ “ in fine medium bone,-----	5½
“ “ “ in medium bone,-----	5
“ “ “ in coarse medium bone,-----	4½
“ “ “ in coarse bone,-----	4
“ “ “ in fine ground rock phosphate,-----	2½
Potash as high grade sulphate,-----	7½
“ kainite,-----	4½
“ muriate,-----	4½

The above trade-values are the figures at which on March 1st the respective ingredients could be bought at retail for cash, in our markets, in the *raw materials* which are the regular source of supply. They also correspond to the average wholesale prices for the six months ending March 1st, plus about 20 per cent. in case of goods for which we have wholesale quotations. The valuations obtained by use of the above figures will be found to agree fairly with the *reasonable retail price* in case of standard raw materials such as:—

\* Dissolved from 2 grams of the unground Phosphate previously extracted with pure water, by 100 c.c. neutral solution of Ammonium Citrate, sp. gr. 1.09, in 30 minutes, at 40° C., with agitation once in five minutes. Commonly called “reverted” or “backgone” Phosphoric Acid.



Sulphate of Ammonia,	Azotin,
Nitrate of Soda,	Dry Ground Fish,
Muriate of Potash,	Cotton Seed,
Sulphate of Potash,	Castor Pomace,
Dried Blood,	Bone,
Plain Superphosphate.	Ground So. Car. Rock.

### TRADE VALUES IN SUPERPHOSPHATES, SPECIAL MANURES, AND MIXED FERTILIZERS OF HIGH GRADES.

The Organic Nitrogen in these classes of goods will be reckoned at the highest figure laid down in the Trade-Values of Fertilizing Ingredients in Raw Materials, namely, 20 cents per pound, it being assumed that the organic nitrogen is derived from the best sources, viz: bone, blood, animal matter, Peruvian guano or other equally good form and not from leather, shoddy, hair or any low-priced inferior forms of vegetable matter, unless the contrary is ascertained.

Insoluble Phosphoric acid will be reckoned at  $4\frac{1}{2}$  cents, it being assumed that it is from bone or similar source and not from rock phosphate, unless found otherwise. In this latter form the insoluble phosphoric acid would be worth commercially only  $2\frac{1}{4}$  cents per pound or but one-half as much as if from fine bone. Potash will be rated at  $4\frac{1}{4}$  cents, if sufficient chlorine is present in the fertilizer to combine with it to make muriate. If there is more Potash present than will combine with the chlorine, then this excess of Potash is reckoned as sulphate.

In most cases the valuation of the Ingredients in Superphosphates and Specials will fall considerably below the retail price of these goods. The difference between the two figures, represents the manufacturer's charges for converting raw materials into manufactured articles. These charges are for grinding and mixing, bagging or barreling, storage and transportation, commission to agents or dealers, long credits, interest on investment, bad debts, and finally, profits.

In 1883, the selling price of superphosphates and specials in Connecticut was, on the average, 18 per cent. greater than the Station valuations, or 38 per cent. in advance of the wholesale cost of the fertilizing elements in the raw materials.

The average cost of Ammoniated Superphosphates and Guanos was about \$41.50, the average valuation was \$35, and the difference \$6.50—an advance of 18.6 per cent. on the valuation.

In case of Specials the average cost was \$50, the average valuation, \$42.50, and the difference \$7.50, or 17.6 per cent. advance on the valuation.

*To obtain the Valuation of a Fertilizer* (i. e. the money-worth of its fertilizing ingredients), we multiply the pounds per ton of Nitrogen, etc., by the trade-value per pound. We thus get the values per ton of the several ingredients, and adding them together we obtain the total valuation per ton.

In case of *Ground Bone*, the fineness of the sample is graded by sifting, and we separately compute the nitrogen-value of each grade of bone which the sample contains, by multiplying the pounds of nitrogen per ton in the sample, by the per cent. of each grade, taking  $\frac{1}{100}$ th of that product, multiplying it by the trade-value per pound of nitrogen in that grade, and taking this final product as the result in cents. Summing up the separate values of each grade, thus obtained, together with the values of each grade for phosphoric acid, similarly computed, the total is the Valuation of the sample of bone.

*The uses of the "Valuation"* are twofold:

- 1, To show whether a given lot or brand of fertilizer is worth, as a commodity of trade, what it costs. If the selling price is not higher than the valuation, the purchaser may be quite sure that the price is reasonable. If the selling price is several dollars per ton more than the valuation, it may still be a fair price; but in proportion as the cost per ton exceeds the valuation there is reason to doubt the economy of its purchase.

- 2, Comparisons of the valuations and selling prices of a number of similar fertilizers will generally indicate fairly which is the best for the money.

But the valuation is not to be too literally construed, for analysis cannot always decide accurately what is the *form* of nitrogen, etc., while the mechanical condition of a fertilizer is an item whose influence cannot always be rightly expressed or appreciated.

For the above first-named purpose of valuation, the trade-values of the fertilizing elements which are employed in the computations should be as exact as possible, and should be frequently corrected to follow the changes of the market.

For the second-named use of valuation, frequent changes of the trade-values are disadvantageous, because two fertilizers cannot be compared as to their relative money-worth, when their valuations are deduced from different data.

Experience leads to the conclusion that the trade-values adopted at the beginning of a year should be adhered to as nearly as possible throughout the year, notice being taken of considerable changes in the market, in order that due allowance may be made therefor.

*The Agricultural value* of a fertilizer is measured by the benefit received from its use, and depends upon its fertilizing effect, or crop-producing power. As a broad, general rule, it is true that Peruvian guano, superphosphates, fish-scrap, dried blood, potash salts, plaster, etc., have a high agricultural value which is related to their trade value, and to a degree determines the latter value. But the rule has many exceptions, and in particular instances the trade-value cannot always be expected to fix or even to indicate the agricultural value. Fertilizing effect depends largely upon soil, crop and weather, and as these vary from place to place, and from year to year, it cannot be foretold or estimated except by the results of past experience, and then only in a general and probable manner.

#### CLASSIFICATION OF THE FERTILIZERS ANALYZED.

The fertilizers and manurial waste products analyzed at the Station laboratory from November 1st, 1883 to November 1st, 1884, were as follows :

Phosphate Rock,	-	-	-	-	6
Phosphatic Guanos,	-	-	-	-	3
Bone Black,	-	-	-	-	1
Bone Ash,	-	-	-	-	2
"Phosphoral,"	-	-	-	-	1
Superphosphates, (plain)	-	-	-	-	24
Superphosphates [ammoniated] and Guanos,	-	-	-	-	105
Superphosphates and other fertilizers, home made,	-	-	-	-	7
Special Manures,	-	-	-	-	24
Bone Manures,	-	-	-	-	35
Dry Ground Fish,	-	-	-	-	11
Blood and Tankage,	-	-	-	-	2
Nitrates,	-	-	-	-	5

Sulphate of Ammonia,	-	-	-	-	3
Cotton Seed, Linseed, and Castor Pomace,	-	-	-	-	6
Meat and Plaster,	-	-	-	-	1
Potash Salts,	-	-	-	-	11
Cotton Hull Ashes,	-	-	-	-	6
House Ashes,	-	-	-	-	2
Brick-kiln Ashes,	-	-	-	-	1
Hen Manure,	-	-	-	-	1
Elephants' Dung,	-	-	-	-	1
Damaged Grain,	-	-	-	-	1
Paper Mill Waste,	-	-	-	-	1
Marine Mud,	-	-	-	-	1
Swamp Muck or Peat,	-	-	-	-	2
Marl,	-	-	-	-	1
Sewage Filters,	-	-	-	-	2
Plaster,	-	-	-	-	2
"Fertilizer,"	-	-	-	-	1
Pollard's Fertilizers	-	-	-	-	4

---

 272

Of these, 59 were samples analyzed for private parties and are not further noticed in these pages. The remaining analyses are given in detail with such discussion as may make them more serviceable.

### PHOSPHATE ROCK.

Of the six samples analyzed, three were from small lots used in laboratory experiments.

The other three were as follows:

**1245.** Crude Fine Ground Navassa Rock.

**1262.** Crude Fine Ground Navassa Rock.

**1263.** Crude Fine Ground Red Navassa.

They were purchased of John Reed, 12 Cliff Street, N. Y., and sampled and sent by J. M. Milbank, Greenfield Hill.

### ANALYSES.

	1245	1262	1263
Total phosphoric acid.....	16.69	16.86	25.01
Of which, soluble in ammonium citrate at 40°		1.13	1.08
"    "    "    "    "    65°		1.61	1.66
Cost per ton, .....	\$17.00	\$17.00	\$14.00
Phosphoric acid cost per 100 lbs.,.....	5.09	5.04	2.79



All the samples had a reddish brown color, **1263** being much darker than the others. The material was fine, passing easily  $\frac{1}{50}$  inch mesh, and contained carbonates in considerable quantity. A sample of the same brand of goods from the same firm, analyzed last year showed 29.90 per cent. of phosphoric acid.

The price and quality of **1245** and **1262** make them much less desirable than **1263**, which furnishes phosphoric acid, in as available a form presumably, for little more than half the price.

The raw phosphates, South Carolina and Navassa, and the phosphatic guanos have been used by some of our farmers instead of superphosphates with satisfactory results. While on the one hand the acid phosphates are more quickly available, on the other hand much more phosphoric acid can be applied to land for the same money in the form of raw phosphate, which latter advantage may make the raw material *in some cases* the more economical as in seeding down to grass or preparing land for fruit trees. In the seven plain superphosphates described further on, phosphoric acid has cost about \$8.50 per 100 lbs. If it can be bought in raw phosphate at \$3.00 per 100 lbs., then 283 lbs. of phosphoric acid can be applied in raw phosphate at the same cost as 100 lbs. in acid phosphate.

#### PHOSPHATIC GUANO.

**1091.** Penguin Island Guano. Stock of Charles Spear, Jr., 85 West street, N. Y. Sampled and sent by C. H. Cables, Thomaston.

##### ANALYSIS.

Phosphoric acid soluble in ammonium citrate, .....	6.41
Phosphoric acid insoluble in ammonium citrate, .....	16.49
Nitrogen, .....	.20

The cost of this article was \$25.00 in New York. Reckoning the so-called reverted phosphoric acid\* at 9 cents, the insoluble phosphoric acid at  $4\frac{1}{2}$  cents, and the nitrogen at 20 cents per pound, the valuation of this guano would be \$27.17.

\* For the meaning of "phosphoric acid in soluble ammonium citrate," otherwise called "reverted phosphoric acid," see Explanations, p. 23.



## PLAIN (NON-NITROGENOUS) SUPERPHOSPHATES.

In the following table (page 33) are given the analyses and valuations of ten samples which have general interest.

Two samples **1190** and **1170** are made from the spent bone black of sugar refineries. They are almost identical in composition and practically all of the phosphoric acid which they contain (over 17 per cent.), is soluble in water.

**1165** and **1172** are called Dissolved Bone. **1172** contains .25 per cent. of nitrogen, which proves the presence of a small amount of organic matter in the goods, presumably from bone. Such superphosphates are prepared from bone which has been boiled or steamed for the extraction of animal matters in the glue factories. This process leaves it dry and brittle without grease and with little nitrogenous matter to interfere with the action of an acid. When raw bone is treated with acid theoretically sufficient to make the phosphoric acid soluble, the grease, animal matter and acid together form a smeary sticky mass, which cannot be handled or spread. Not more than one-third of the phosphoric acid of raw bones can be dissolved with acid practically, without making the product too sticky for convenience.

It should be said that **1172** was sold at a reduced price by the manufacturer, being an odd lot not of the usual composition.

It furnishes however, about 17 per cent. of available phosphoric acid at a low price.

**1134** is a sample drawn from a bag of superphosphate, given to this Station by the North Carolina Department of Agriculture, which was made from the phosphate rock lately discovered in that State. It contains as much soluble phosphoric acid as a good deal of the acid phosphate made from South Carolina rock, but less reverted and insoluble phosphoric acid. The development of the North Carolina phosphate deposits as well as those of Alabama, will be watched with interest. As yet their products have not entered the market.

Allowing 9 cents per pound for reverted phosphoric acid, and  $2\frac{1}{4}$  cents per pound for insoluble phosphoric acid, the soluble phosphoric acid in these goods has cost from  $7\frac{1}{2}$  to  $10\frac{1}{2}$  cents per pound, or on the average  $9\frac{1}{8}$  cents.

Making no allowance for the reverted or insoluble acid, soluble phosphoric acid has cost from  $7\frac{1}{2}$  to  $11\frac{1}{2}$  cents per pound, or, on the average  $10\frac{1}{4}$  cents.

## PLAIN (NON-NITROGENOUS) SUPERPHOSPHATES.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and sent by
1190	Dissolved Bone Black.	Geo. B. Forrester, N. Y. City.	Manufacturer.	M. S. Baldwin, Naugatuck.
1172	Pure Dissolved Bone.	H. J. Baker & Bros., N. Y. City.	"	J. J. Webb, Hamden.
1180	Mapes' High Grade Superphosphate.	Mapes' Formula and Peruvian Guano Co., 158 Front St., N. Y.	-----	Station Agent.
1256	Plain Superphosphate.	Nat. Fertilizer Co., Bridgeport.	Manufacturer.	R. A. Moore, Kensington.
1243	Navassa Superphosphate.	John Reed, 12 Cliff St., N. Y.	-----	J. M. Milbank, Greenfield Hill.
1184	Bowker's Acid Phosphate.	Bowker Fertilizer Co., Boston and New York.	Usher & Tinker, Plainville.	Station Agent.
1170	Bradley's Dissolved Bone Black.	Bradley Fertilizer Co., 27 Kilby St., Boston, Mass.	Manufacturer.	C. H. Cables, Thomaston.
1165	Baker's Pure Dissolved Bone.	H. J. Baker & Bros., 215 Pearl St., New York.	D. H. Van Hoosear, Wilton.	D. H. Van Hoosear, Wilton.
1134	North Carolina Acid Phosphate.	-----	-----	N. C. Dep't Agriculture.
1331	Acid Navassa Phosphate.	John Reed, 55 Cliff St., New York.	-----	From bag purchased by Station.

## PLAIN (NON-NITROGENOUS) SUPERPHOSPHATES.

Station No.	Name or Brand.	Phosphoric Acid.						Cost per Ton.	Valuation per Ton.	Valuation Exceeds Cost.	
		Soluble.	Reverted.	Insoluble.	Total Phos. Acid.	Phos. Acid Guaranteed.	Available.				
							Found.				Guaranteed.
1190	Forrester's Dissolved Bone Black.....	17.29	.00	.11	17.40	..	..	---	\$26.00	\$34.63	\$8.63
1172	Baker's Pure Dissolved Bone.....	9.82	7.11	3.93	20.86	..	..	---	28.00	35.97	7.97
1180	Mapes' High Grade Superphosphate .....	32.64	1.38	.64	34.66	..	..	---	65.00	68.34	3.34
1256	Chittenden's Plain Superphosphate .....	8.04	1.66	3.48	13.18	..	..	---	18.00	20.64	2.64
1243	Navassa Superphosphate .....	10.97	.52	2.67	14.16	..	..	---	23.00	24.08	1.08
1184	Bowker's Acid Phosphate .....	10.82	1.11	3.13	15.06	..	..	---	25.00	25.05	.05
1170	Bradley's Dissolved Bone Black .....	17.13	.00	.09	17.22	..	..	---	34.50	34.30	Cost Exceeds Valuation. \$0.20
1165	Baker's Pure Dissolved Bone.....	13.91	.24	.35	14.50	..	..	---	30.00	28.57	1.43
1134	North Carolina Acid Phosphate .....	10.85	.52	.47	11.84	..	..	---	---	---	---
1331	Acid Navassa Phosphate.....	---	---	---	---	..	..	---	---	---	---

Cost  
Exceeds  
Valua-  
tion.

NITROGENOUS SUPERPHOSPHATES, FISH AND POTASH AND  
GUANOS.

(See pages 37 to 44.)

In this class are included all superphosphates containing nitrogen, (which with a few exceptions also contain potash), except such as are claimed to be specially adapted to the wants of some particular crop or class of crops; also Peruvian guano, crude or manipulated, and the fish fertilizers which have been treated with acid or mixed with potash salts. The analyses of dry ground fish are tabulated by themselves further on.

Of the nitrogenous superphosphates here described 4 are guanos, 26 are called "Superphosphates" or "Ammoniated Superphosphates," 8 "Fish and Potash," 6 "Dissolved Bone," 2 "Complete Manures," 2 "Animal Fertilizers," and the rest are "Acid Fish Guano," "Sea Fowl Guano," "Soluble Pacific Guano," "Blood Guano," "Pelican Bone," "Prepared Fertilizer," "Swift-Sure Phosphate," "Reliable Phosphate," "Special Favorite," "Common Sense Fertilizer," "Bone and Potash Phosphate."

Samples 1320, 1313, 1198, 1316, 1311, 1314, 1317 and 1329 are "Manufacturers' Samples," deposited by the manufacturers with the director of the station in compliance with Section 2 of the fertilizer law. The station agents who visited different parts of the state to draw samples did not find those brands for sale at any of the points visited. It therefore became necessary for the station, in order to do its part under the provisions of the law, to analyze these samples, although as a rule it prefers to analyze only those goods which are procured from stock offered for sale in the state.

**1254.** Miller's Raw Bone Phosphate is different in composition from samples of the same goods previously analyzed, owing to a change in the formula, as we are advised by the manufacturer.

The three brands of Peruvian Guano offered for sale by Hurtado & Co., Seth Chapman's Sons and possibly other New York dealers, are compared in the following table:

*Peruvian Guano.*

	Standard.	Guaranteed.	Lobos.	
	1100	1220	1099	1098
Nitrogen as nitrates,-----	.22	.26	.29	.22
“ of ammonia salts,-----	7.35	6.37	5.78	3.75
“ of organic matter, -----	.48	.90	.59	.87
Soluble phosphoric acid,-----	2.54	2.16	2.00	4.04
Reverted phosphoric acid,-----	3.72	4.68	4.98	4.38
Insoluble phosphoric acid,-----	8.60	9.06	10.89	8.76
Potash,-----	2.48	2.72	3.06	3.46
Cost,-----	\$67.00	67.00	56.00	52.00
Valuation,-----	57.21	55.77	54.63	47.20
Nitrogen found,-----	8.05	7.53	6.66	4.84
“ guaranteed,*-----	7.41	7.41	5.35	4.12
Phosphoric acid found,-----	14.86	15.90	17.87	17.18
“ “ guaranteed,-----	13.00	13.00	17.00	15.00
Potash found,-----	2.48	2.72	3.06	3.46
“ guaranteed,-----	2.00	2.00	3.00	2.00

The average cost of the 52 superphosphates and guanos, whose cost could be ascertained, is \$40.73, and the average valuation \$33.13 per ton, a difference of \$7.60 or about 22.9 per cent. of the valuation. In only one case was the cost less than the valuation. As has been fully explained on page 26 the valuation is intended to represent the retail cost in the Connecticut market of the *raw materials* of which the mixed goods are composed. The 22.9 per cent. of this retail cost (or \$7.60 per ton on the average in the case of superphosphates) represents the manufacturer's expenses and profits in mixing, packing and selling the goods.

Last year the average cost of the superphosphates was \$41.42 and the average difference between cost and valuation \$6.50, or 18.6 per cent. of the valuation.

31 of the superphosphates were up to their guaranteed composition or above it, 15 were below guarantee in respect to one ingredient, 5 were below in respect to two ingredients and 1 was below guarantee in all particulars. The purchaser has the right to insist that the goods he buys shall be essentially up to guarantee.

\* Here and in the following pages wherever the guarantee is stated it is the manufacturer's *minimum* figure. Thus if the guarantee is "Ammonia 3-5," it is given in this report as "Nitrogen 2.47," which is the equivalent of ammonia 3 per cent.; 17 parts of ammonia containing 14 parts of nitrogen.



Goods made with reasonable care will show certain variations in composition which cannot be avoided and it may well happen that an article will be above guarantee on one ingredient and a little below it on another. Such differences may be overlooked, the larger amount on the one hand offsetting the deficiency on the other; but a serious deficiency in any one ingredient or a general deficiency in all should be made good by the seller.

The brand "Fish and Potash" has been a favorite one in this State and is now offered by a number of manufacturers. A comparison of the different articles of this name is given in the following table:

*Fish and Potash.*

	Williams, Clark & Co.	Quinnipiac Co., Plain.	Miles Co.	Chittenden's.	Quinnipiac Crossed- Fishes.	Bowker.	Russell Coe. (Davidge.)	Stearns'.
	1213	1204	1162	1221	1132	1211	1291	1289
Nitrogen of Nitrates	.09	----	----	----	----	----	----	----
Nitrogen of Ammon.	.31	.41	----	.11	.66	----	----	.45
Nitrogen of Organic Matters	3.70	2.11	2.21	2.94	3.26	2.00	3.07	1.97
Soluble Phos. Acid	.24	.32	4.33	.64	2.05	3.59	1.99	1.51
Reverted Phos. Acid	3.22	4.25	1.67	2.00	2.49	2.09	3.30	2.39
Insoluble Phos. Acid	3.01	4.08	2.27	4.33	1.28	2.95	1.78	1.65
Potash	5.15	4.44	6.27	6.38	3.52	4.41	4.81	4.62
Cost	\$34.00	33.00	36.00	35.00	38.00	35.00	40.00	40.00
Valuation	\$29.66	25.97	27.88	26.44	28.66	25.34	27.89	22.60
Nitrogen Found	4.10	2.52	2.21	3.05	3.92	2.00	3.07	2.42
Nitrogen Guaranteed*	3.29	2.00	----	2.88	3.25	2.25	2.88	2.47
Phos. Acid Found	6.47	8.65	8.27	6.97	5.82	8.63	7.07	5.55
Phos. Acid Guarante- eed	3.00	6.00	----	6.00	5.00	8.00	5.00	6.00
Potash Found	5.15	4.44	6.27	6.38	3.52	4.41	4.81	4.62
Potash Guaranteed	3.00	4.00	----	5.00	3.00	4.00	4.00	4.00

\* See foot-note, page 35.

In the table, on pages 45 and 46, is given a comparison of the analyses of different brands of superphosphates, which have been executed at this station since its establishment.

It serves to show the variations in the quality of the goods, or any changes made by the manufacturers in the formula by which they are compounded.

## NITROGENOUS SUPERPHOSPHATES AND GUANOS.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and sent by
1287	Wilcox Acidulated Fish Guano.	L. Wilcox & Co., Mystic Bridge.	J. A. Lewis, Willimantic.	Station Agent.
1214	Wilcox Prepared Fertilizer.	"	"	"
1099	Guaranteed Peruvian Guano.	-----	Seth Chapman's Son & Co., 170 Front St., New York.	C. H. Cables, Thomaston.
1319	Shoemaker's Swift Sure Superphosphate.	M. L. Shoemaker, Philadelphia, Penn.	Manufacturer.	Manufacturer.
1218	Bosworth Bro's Superphosphate of Lime.	Bosworth Bros., Putnam.	J. A. Paine, Danielsonville.	Station Agent.
1128	Mapes' Complete Manure, "A" Brand.	Mapes, F. & P. G. Co., 158 Front St., New York City.	R. B. Bradley & Co., New Haven.	"
1129	Sanford's Bone Superphosphate.	Chas. Sanford, Redding Ridge.	Manufacturer.	Wm. H. Burr, Redding Ridge.
1144	Lister's Ammoniated Dissolved Bone Phosphate.	Lister Bros., Newark, N. J.	R. B. Bradley & Co., New Haven.	Station Agent.
1236	Darling's Animal Fertilizer.	L. B. Darling & Co., Pawtucket, R. I.	T. Pease & Son's Co., Windsor Locks.	Fred. B. Hathaway, Suffield.
1213	Williams, Clark & Co's Fish and Potash.	Williams, Clark & Co., 109 Pearl St. New York City.	J. A. Lewis, Willimantic.	Station Agent.
1143	Mapes' Complete Manure for light soils.	Mapes, F. & P. G. Co., 158 Front St., New York City.	Birdsey & Forster, Meriden.	"
1310	G. H. Harris & Son's Superphosphate.	G. H. Harris & Son, Eagleville.	Manufacturer.	Manufacturer.
1098	Peruvian Guano Lobos.	-----	Seth Chapman's Son & Co., 170 Front St., New York.	C. H. Cables, Thomaston.
1235	H. J. Baker's A. A. Ammoniated Superphosphate.	H. J. Baker & Bro., 215 Pearl St., New York City.	W. W. Cooper, Suffield.	Fred. D. Hathaway, Suffield.
1140	E. Frank Coe's Ammoniated Bone Superphosphate.	E. Frank Coe, Burling Slip, New York.	R. B. Bradley & Co., New Haven.	Station Agent.

NITROGENOUS SUPERPHOSPHATES AND GUANOS.—*Continued.*

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and sent by
1207	Baker's Pelican Bone Fertilizer.	H. J. Baker & Bro., 215 Pearl St., New York City.	Cochrane Bros., West Cornwall.	Station Agent.
1206	Baker's "A. A." Ammoniated Superphosphate.	H. J. Baker & Bro., 215 Pearl St., New York City.	J. H. Ives, Danbury.	"
1264	Baker's "A. A." Ammoniated Superphosphate.	H. J. Baker & Bro., New York.	J. E. Andrews, Mt. Carmel.	S. A. Smith, Cheshire.
1254	G. W. Miller's Raw Bone Phosphate.	G. W. Miller, Middlefield.	Manufacturer.	Manufacturer.
1215	Preston's Ammoniated Bone Superphosphate.	H. Preston & Sons, Greenpoint, L. I.	J. B. Merrow & Sons, Merrow.	Station Agent.
1177	Bradley's Superphosphate.	Bradley Fertilizer Co., 27 Kilby St., Boston, Mass.	Peck Brothers, Northfield.	C. H. Cables, Thomaston.
1204	Quinnipiac Fish and Potash, Plain Brand.	Quinnipiac Fertilizer Co., New London.	Usher & Tinker, Plainville.	Station Agent.
1202	Universal Ammoniated Bone.	Williams, Clark & Co., 109 Pearl St., New York.	" " "	"
1110	Dickinson's Ammoniated Bone Phosphate.	David Dickinson, Middle Haddam.	Manufacturer.	A. H. Worthington, Middle Haddam.
1216	Darling's Animal Fertilizer.	L. B. Darling & Co., Pawtucket, R. I.	J. B. Barstow, Norwich.	Station Agent.
1292	The Common Sense Fertilizer, No. 2.	Common Sense Fertilizer Co., 42 Congress St., Boston, Mass.	Quinebaug Store, Danielsonville.	"
1288	Lombard & Mathewson's Superphosphate.	Lombard & Mathewson, Warrenville.	Buck, Durkee & Stiles, Williamantic.	"
1186	Miller's Raw Bone Phosphate.	G. W. Miller, Middlefield.	G. W. Miller, Middlefield.	M. W. Terrill, Middlefield.
1130	Quinnipiac Phosphate.	Quinnipiac Fertilizer Co., New London.	Olds & Whipple, Hartford.	Station Agent.
1162	Miles Co's Fish and Potash.	G. W. Miles Co., Milford.	Manufacturer.	G. L. Fox, New Haven.

NITROGENOUS SUPERPHOSPHATES AND GUANOS.—*Continued.*

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and sent by
1222	Bay State Fertilizer.	Clark's Cove Guano Co., New Bedford, Mass.	J. E. Leonard, Jewett City.	Station Agent.
1282	Farmer's Friend Ammoniated Dissolved Bone.	Read & Co., New York.	M. V. B. Lamb, Norwich.	"
1221	Clittenden's Fish and Potash.	National Fertilizer Co., Bridgeport.	Southmayd & Gardiner, Middletown.	"
1137	Bradley's Patent Superphosphate of Lime.	Bradley Fertilizer Co., Boston, Mass.	A. C. Sternberg, Hartford.	"
1203	Americus Brand Ammoniated Bone Superphosphate.	Williams, Clark & Co., 109 Pearl St., New York.	Usher & Tinker, Plainville.	"
1301	Bowker's Dissolved Bone.	Bowker Fertilizer Co., Boston, Mass.	Coburn & Gale, Hartford.	"
1132	Quinnipiac Fish and Potash, Crossed-fishes Brand.	Quinnipiac Fertilizer Co., New London.	Olds & Whipple, Hartford.	"
1211	Bowker's Fish and Potash.	Bowker Fertilizer Co., 43 Chatham St., Boston, Mass.	Usher & Tinker, Plainville.	"
1100	Standard Peruvian Guano.	-----	Seth Chapman's Son & Co., 170 Front St., New York.	C. H. Cables, Thomaston.
1209	Original Coe's Superphosphate.	Wm. L. Bradley, Boston, Mass.	Smith & Sons, West Cornwall.	Station Agent.
1157	Buffalo Ammoniated Bone Superphosphate.	Buffalo Fertilizer Co. and Chemical Works, Buffalo, N. Y.	S. J. Hall, Meriden.	"
1141	Bowker's Hill and Drill Phosphate.	Bowker Fertilizer Co., Boston and New York.	Coburn & Gale, Hartford.	"
1220	Standard Peruvian Guano.	Hobson, Hurtado & Co., 63 Pine St., New York, Importers.	Southmayd & Gardiner, Middletown.	"
1272	Baker's Dissolved Bone.	Baker Fertilizer Co., N. Y. City.	Hubbell & Bradley, Saugatuck.	S. B. Wakeman, Saugatuck.
1205	Potato, Hop and Tobacco Phosphate.	Buffalo Fertilizer and Chemical Works, Buffalo, N. Y.	W. W. Foote, Danbury.	Station Agent.

NITROGENOUS SUPERPHOSPHATES AND GUANOS. — *Continued.*

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and sent by
<b>1291</b>	Davidge's Fish and Potash.	Russel Coe, Linden, N. J.	Smith & Sons, West Cornwall.	Station Agent.
<b>1293</b>	Davidge's Special Favorite.	" "	" "	"
<b>1210</b>	Russel Coe's Ammoniated Bone Superphosphate.	" "	" "	"
<b>1305</b>	Soluble Pacific Guano.	Glidden & Curtis, Boston, Mass.	H. A. Stillman, Hartford.	"
<b>1223</b>	Mitchell's Standard Superphosphate.	A. Mitchell, Linden, N. J.	John A. Paine, Danielsonville.	"
<b>1289</b>	Stearns', No. 1, Eagle Brand Fish and Potash.	Stearns & Co., New York and Fall River, Mass.	A. S. Russell & Co., Meriden.	"
<b>1208</b>	Cooke's Blood Guano.	Nat. Fertilizer Co., Bridgeport.	Burtis & Mead, New Canaan.	"
<b>1320</b>	Bradley's B. D. Sea Fowl Guano.	Bradley Fertilizer Co., Boston, Mass.	Manufacturer.	Manufacturer.
<b>1313</b>	Buffalo Superphosphate, No. 2.	Buffalo Fertilizer and Chemical Works, Buffalo, N. Y.	"	"
<b>1198</b>	Curtis' Reliable Phosphate.	J. G. Curtis, Elliotts.	"	"
<b>1228</b>	N. H. Fertilizer Co.'s Standard Superphosphate.	N. H. Fertilizer Co., New Haven.	"	Station Agent.
<b>1316</b>	Sparrow's Bone and Potash Phosphate.	Judson & Sparrow, 38 South Market St., Boston, Mass.	"	Manufacturer.
<b>1311</b>	Lister Bro's Standard Phosphate.	Lister Bros., Newark, N. J.	"	"
<b>1314</b>	Cooke's Dissolved Ground Bone.	Nat. Fertilizer Co., Bridgeport.	"	"
<b>1317</b>	Quinnipiac Extra Superphosphate.	Quinnipiac Fertilizer Co., New London.	"	"
<b>1329</b>	Stearns' Ammoniated Bone Superphosphate.	Stearns & Co., 149 Front St., New York.	"	"
<b>1332</b>	Paul Thomson's Charter Oak Fertilizer.	Paul Thomson, Hartford.	"	"



## NITROGENOUS SUPERPHOSPHATES AND GUANOS.

Station No.	Name or Brand.	Nitrogen.						Phosphoric Acid.						Potash.		Cost per Ton.	Valuation per Ton.	Cost Exceeds Valuation.
		From Nitrates.	From Ammonia.	From Organic Matters.	Total Nitrates.	From Nitrogen.	Nitrogen.	Soluble in Water.	Reverted.	Insoluble.	Total Phos. Found.	Phos. Acid (guano-). Found.	Available. Found.	Guano-anted. Found.	Guano-anted. Found.			
1287	Wilcox Acidulated Fish Guano.	---	---	6.06	6.06	3.29	3.29	1.47	4.47	.26	6.20	.23	---	---	---	\$27.50	\$35.54	*\$3.04
1214	Wilcox Prepared Fertilizer	---	.83	3.05	3.88	3.29	3.29	3.89	2.87	3.03	9.79	---	6.76	5.50	---	36.00	35.80	.20
1099	Guaranteed Peruvian Guano	.29	5.78	.59	6.66	5.35	5.35	2.00	4.98	10.83	17.87	17.00	6.98	---	---	56.00	54.63	1.37
1319	Swift Sure Superphosphate	.42	---	2.94	3.36	2.47	2.47	8.78	2.88	1.86	13.52	14.00	11.66	9.00	4.00	43.00	41.07	1.93
1218	Bosworth Bros'. Superphosphate of Lime	---	1.00	1.14	2.14	2.00	2.00	4.64	5.52	5.20	15.36	14.00	10.16	8.50	2.00	38.00	34.83	3.17
1128	Mapes' Complete Manure, "A" Brand.	.80	.70	1.07	2.57	2.47	2.47	8.98	2.74	3.64	15.36	10.00	11.72	8.00	2.50	42.00	38.73	3.27
1129	Sanford's Bone Superphos.	---	---	1.58	1.58	1.58	1.58	5.38	3.91	6.04	15.33	15.33	9.29	9.29	2.39	35.00	31.59	3.41
1144	Lister's Ammoniated Dissolved Bone Phosphate.	---	.56	1.48	2.04	1.65	1.65	8.24	1.60	1.61	11.45	10.00	9.84	8.00	1.89	35.00	30.80	4.20
1236	Darling's Animal Fertilizer	---	---	3.91	3.91	4.00	4.00	.75	6.79	8.42	15.96	10.00	7.54	---	4.47	45.00	40.74	4.26
1213	Williams, Clark & Co's Fish and Potash	.09	.31	3.70	4.10	3.29	3.29	.24	3.22	3.01	6.47	3.00	3.46	---	5.15	34.00	29.66	4.34
1143	Mapes' Complete Manure for Light Soils.	.84	2.89	2.17	5.90	5.00	5.00	6.15	1.33	1.86	9.34	7.00	7.48	---	8.04	52.00	47.61	4.39
1310	G. H. Harris & Son's Superphosphate.	---	---	2.76	2.76	---	---	2.89	5.25	4.57	12.71	---	8.14	---	---	35.00	30.38	4.62
1098	Peruvian Guano Lobos.	.22	3.75	.87	4.84	4.12	4.12	4.04	4.38	8.76	17.18	15.00	8.42	3.46	2.00	52.00	47.20	4.80
1235	Baker's A. A. Ammoniated Superphosphate	---	1.62	1.26	2.88	2.47	2.47	9.33	.85	.49	10.67	---	9.82	10.00	2.66	40.00	35.06	4.94
1140	E. Frank Co's Ammoniated Bone Superphos.	---	---	2.17	2.17	2.06	2.06	7.73	1.42	2.89	12.04	11.00	9.15	9.00	0.46	35.00	29.30	5.70

\* Valuation exceeds cost.

## NITROGENOUS SUPERPHOSPHATES AND GUANOS.—Continued.

Station No.	Name or Brand.	Nitrogen.						Phosphoric Acid.						Potash.		Valuation per Ton.	Cost per Ton.	Valuation per Ton.	Cost Exceeds Valuation.
		From Nitrates.	From Ammonia.	From Organic Matters.	Total Nitrogen Found.	Nitrogen Guaranteed.	Soluble in Water.	Reverted.	Insoluble.	Total Phos. Found.	Phos. Acid Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.				
1207	Pelican Bone Fertilizer	---	1.54	.65	2.19	1.86	8.30	.23	36	8.89	---	8.53	8.00	2.82	2.00	\$29.11	\$35.00	\$5.89	
1206	"A. A." Ammoniated Superphosphate	---	1.63	.90	2.53	2.47	9.29	1.01	.55	10.85	---	10.30	10.00	2.93	2.00	34.07	40.00	5.93	
1264	"A. A." Ammoniated Superphosphate	---	1.98	.46	2.44	2.47	8.85	1.32	.78	10.95	---	10.17	10.00	3.00	2.00	33.88	40.00	6.12	
1254	G. W. Miller's Raw Bone Phosphate	---	---	4.28	4.28	---	3.93	3.12	1.42	8.47	---	7.05	---	5.86	---	36.86	43.00	6.14	
1215	Preston's Ammon. Bone Superphosphate	---	.24	2.02	2.26	2.06	7.14	1.34	3.29	11.77	---	8.48	9.00	---	---	28.79	35.00	6.21	
1177	Bradley's Superphosphate	.05	.98	1.61	2.64	2.27	8.14	1.37	3.22	12.73	11.00	9.51	9.00	3.09	1.50	35.05	42.00	6.95	
1204	Quinnipiac Fish and Potash, Plain Brand	---	.41	2.11	2.52	2.00	.32	4.25	4.08	8.65	6.00	4.57	4.00	4.44	4.00	25.97	33.00	7.03	
1202	Universal Ammon. Dissolved Bone	---	---	1.82	1.82	1.65	6.91	3.58	1.57	12.06	10.00	10.49	9.00	---	---	28.95	36.00	7.05	
1110	Dickinson's Ammon. Bone Phosphate	---	---	4.30	4.30	---	4.41	4.20	4.76	13.37	---	8.61	---	---	---	37.87	45.00	7.13	
1216	Darling's Animal Fertilizer	---	.39	3.00	3.39	4.00	.67	6.58	7.57	14.82	10.00	8.24	---	4.35	5.00	37.77	45.00	7.23	
1292	The Common Sense Fertilizer, No. 2	.03	.75	1.58	2.36	2.00	.44	6.86	1.12	8.42	4.00	7.30	---	3.78	3.00	27.76	35.00	7.24	
1288	Lombard & Mathewson's Superphosphate	---	---	2.66	2.66	---	3.32	5.50	3.61	12.43	---	8.82	---	.17	---	30.43	38.00	7.57	
1186	Miller's Raw Bone Phosphate	---	---	1.86	1.86	---	5.21	5.59	2.46	13.66	---	10.80	---	6.04	---	35.26	43.00	7.74	
1130	Quinnipiac Phosphate	---	.43	2.43	2.86	2.47	7.52	1.32	.90	9.74	9.00	8.84	8.00	2.62	2.00	32.07	40.00	7.93	
1162	Miles Co's Fish and Potash	---	---	2.21	2.21	---	4.33	1.67	2.27	8.27	---	6.00	---	6.27	---	27.88	36.00	8.12	

## NITROGENOUS SUPERPHOSPHATES AND GUANOS.—Continued.

Station No.	Name or Brand.	Nitrogen.						Phosphoric Acid.						Potash.		Cost per Ton.	Valuation per Ton.	Cost Exceeds Valuation.
		From Nitrates.	From Ammonia.	From Organic Matters.	Total Nitrogen Found.	Nitrogen Guaranteed.	Soluble in Water.	Reverted.	Insoluble.	Total Phosphoric Acid Found.	Phosphoric Acid Guaranteed.	Available.	Guaranteed.	Found.	Guaranteed.			
1222	Bay State Fertilizer-----	.58	.56	1.77	2.91	2.10	7.76	1.24	1.99	10.99	9.50	9.00	8.00	3.17	2.00	\$42.00	\$33.86	\$8.14
1282	Farmer's Friend Ammon.																	
1221	Dissolved Bone -----	.65	.88	.42	1.95	1.86	4.77	4.23	2.58	11.58	8.00	9.00	---	1.62	2.00	37.00	28.74	8.26
1221	Chittenden's Fish and Potash -----																	
1137	Bradley's Patent Superphosphate of Lime -----		.11	2.94	3.05	2.88	.64	2.00	4.33	6.97	6.00	2.64	---	6.38	5.00	35.00	26.44	8.56
1203	Americus Brand Ammon.																	
1301	Bone Superphosphate--	.11		2.12	2.23	1.65	6.93	2.38	1.11	10.42	10.00	9.31	9.00	1.16	1.00	38.00	29.01	8.99
1132	Bowker's Dissolved Bone-Fish and Potash, Crossed-fish Brand -----			1.51	1.51	1.65	7.70	1.16	.99	9.85	8.00	8.86	5.00	1.77	2.00	35.00	25.92	9.08
1211	Bowker's Fish and Potash -----		.66	3.26	3.92	3.25	2.05	2.49	1.28	5.82	5.00	4.54	3.00	3.52	3.00	38.00	28.66	9.34
1100	Standard Peruvian Guano -----			2.00	2.00	2.25	3.59	2.09	2.95	8.63	8.00	5.68	---	4.41	4.00	35.00	25.34	9.66
1209	Original Coe's Superphos.	.22	7.35	.48	8.05	7.41	2.54	3.72	8.60	14.86	13.00	6.26	---	2.48	2.00	67.00	57.21	9.79
1157	Buffalo Ammoniated Bone Superphosphate -----			2.31	2.31	2.06	7.31	1.75	3.52	12.58	11.00	9.06	9.00	---	---	40.00	30.18	9.82
1141	Bowker's Hill and Drill Phosphate -----		.32	3.08	3.40	2.50	7.06	.91	2.20	10.17	9.00	7.97	8.00	1.32	2.00	43.00	32.59	10.41
1220	Standard Peruvian Guano -----		.79	1.47	2.26	1.65	7.62	.97	.96	9.55	10.00	8.59	8.00	2.29	2.00	40.00	29.16	10.84
1272	Baker's Dissolved Bone --	.26	6.37	.90	7.53	7.41	2.16	4.68	9.06	15.90	13.00	6.84	---	2.72	2.00	67.00	55.77	11.23
1205	Potato, Hop and Tobacco Phosphate -----			1.42	1.42	1.65	7.60	.52	1.33	9.45	---	8.12	5.00	1.66	2.00	36.00	24.43	11.57
1291	Davidge's Fish and Potash -----			3.10	3.10	2.00	6.60	.61	2.16	9.37	9.00	7.21	8.00	4.76	6.00	45.00	33.31	11.69
1293	" Special Favorite -----			3.07	3.07	2.88	1.99	3.30	1.78	7.07	5.00	5.29	---	4.81	4.00	40.00	27.89	12.11
				2.22	2.22	1.24	4.22	3.16	2.61	9.99	11.00	7.38	8.00	1.81	1.50	40.00	26.90	13.10

## NITROGENOUS SUPERPHOSPHATES AND GUANOS.—Continued.

Station No.	Name or Brand.	Nitrogen.						Phosphoric Acid.						Potash.		Cost per Ton.	Valuation per Ton.	Cost Exceeds Valuation.
		From Nitrates.	From Ammonia.	From Organic Matters.	Total Nitrogen Found.	Nitrogen Guaranteed.	Soluble in Water.	Reverted.	Insoluble.	Total Phosphoric Acid Found.	Phosphoric Acid Guaranteed.	Available.	Found.	Guaranteed.	Found.			
1210	Russel Coe's Ammoniated Bone Superphosphate.	---	---	2.21	2.21	1.86	5.54	1.15	3.48	10.17	11.00	6.69	10.00	1.76	1.50	\$40.00	\$26.62	\$13.38
1305	Soluble Pacific Guano.	---	---	2.37	2.37	2.50	6.48	1.50	4.17	12.15	10.00	7.98	8.00	3.16	2.00	45.00	31.58	13.42
1223	Mitchell's Standard Superphosphate.	---	---	1.73	1.87	2.06	3.64	2.09	4.50	10.23	10.00	5.73	8.00	1.69	3.00	38.00	24.07	13.93
1289	Stearns' No. 1 Eagle Brand Fish and Potash.	---	---	1.97	2.42	2.47	1.51	2.39	1.65	5.55	6.00	3.90	3.00	4.62	4.00	40.00	22.60	17.40
1208	Cooke's Blood Guano.	.07	---	1.66	1.73	1.65	4.85	1.30	4.49	10.64	10.00	6.15	7.00	3.10	---	45.00	25.58	19.42
1320	B. D. Sea Fowl Guano.	.28	---	2.70	2.98	2.50	7.70	1.43	2.51	11.64	11.00	9.13	9.00	3.14	2.00	---	34.71	---
1313	Buffalo Superphos., No. 2.	---	---	---	---	---	6.97	3.97	2.03	12.97	13.00	9.00	11.00	1.02	2.50	---	23.79	---
1198	J. G. Curtis' Reliable Phosphate.	---	---	1.60	1.60	1.60	2.69	1.80	3.06	7.55	7.55	4.49	4.49	---	---	---	17.77	---
1298	N. H. Fertilizer Co.'s Superphosphate.	1.91	---	1.25	3.16	---	3.63	1.22	4.78	9.63	---	4.85	---	2.87	---	---	29.22	---
1316	Sparrow's Bone and Potash Phosphate.	---	---	1.06	1.94	3.00	10.55	1.78	.40	12.73	---	12.33	9.00	4.32	4.00	---	40.75	---
1311	Lister Bros.' Stand. Phosphate.	---	---	---	---	---	9.40	2.07	.31	11.78	12.00	11.47	10.00	2.53	1.50	---	36.89	---
1314	Cooke's Dissolved Ground Bone.	---	---	1.10	1.10	---	4.14	1.88	7.42	13.44	11.40	6.02	---	3.77	---	---	21.94	---
1317	Quinnipiac Extra Superphosphate.	---	---	.56	1.99	2.65	3.92	3.84	2.47	10.23	10.00	7.76	8.00	2.59	2.00	---	29.59	---
1329	Stearns' Ammoniated Bone Superphosphate.	---	---	.43	2.48	2.91	7.19	2.76	1.39	11.34	9.00	9.95	8.00	2.91	2.00	---	34.88	---
1332	Thomson's Charter Oak Fertilizer.	---	---	.64	1.30	1.94	.21	.63	.11	.95	---	.84	---	2.89	---	---	12.13	---



## COMPARISON OF SUPERPHOSPHATES OF THE SAME BRAND.

NAME.	No. of Analyses.	Year when Analyzed.	Nitrogen.	Phos. Acid.		Potash.
				Avail-able.	Total.	
Baker's, H. J., A. A. Superphosphate	3	1882	3.03	9.59	10.16	2.82
	3	1883	2.61	9.55	10.04	2.74
	3	1884	2.62	10.09	10.82	2.83
Bosworth Bros' Superphosphate ---	1	1882	2.10	10.11	14.28	2.23
	1	1883	1.83	8.51	16.41	2.23
	1	1884	2.14	10.16	15.36	2.32
Bowker's Fish and Potash-----	1	1882	2.18	5.30	7.46	5.44
	1	1884	2.00	5.68	8.63	4.41
Bowker's Hill and Drill Phosphate_	1	1881	2.40	7.56	12.16	2.49
	1	1883	1.81	7.17	10.75	1.59
	1	1884	2.26	8.59	9.55	2.29
Bradley Fertilizer Co's Superphos. --	1	1878	2.51	7.22	7.65	----
	1	1880	3.06	8.35	9.60	1.46
	1	1882	2.67	9.71	11.46	1.74
	2	1883	2.78	9.34	11.84	1.93
	2	1884	2.48	9.71	12.76	2.58
Coe, E. F., Superphosphate -----	7	1878	2.36	8.84	11.92	----
	2	1879	2.52	10.61	12.11	----
	1	1880	2.61	9.69	11.75	----
	1	1881	2.34	9.60	12.29	----
	1	1882	2.63	9.45	12.25	----
	1	1883	2.19	9.53	13.26	----
	1	1884	2.17	9.15	12.04	----
	1	1884	2.17	9.15	12.04	----
Coe, Russel, Superphosphate -----	3	1878	1.86	6.48	15.27	----
	1	1879	1.99	9.76	13.22	----
	2	1880	.99	5.73	14.18	1.35
	1	1882	2.10	9.96	11.78	1.41
	2	1883	2.30	7.63	9.08	1.24
	1	1884	2.21	6.69	10.17	1.76
Cooke's Blood Guano -----	1	1881	2.49	8.13	13.27	2.26
	1	1882	1.88	6.94	11.21	1.54
	1	1883	1.79	7.40	8.31	1.48
	1	1884	1.73	6.15	10.64	3.10
Darling's Animal Fertilizer -----	1	1881	4.09	6.47	13.61	6.47
	1	1882	4.20	8.16	13.27	5.95
	1	1883	3.91	6.45	15.16	4.68
	2	1884	3.65	7.89	15.39	4.41
Dickinson's Phosphate -----	5	1881	3.47	13.71	17.01	.34
	1	1884	4.30	8.61	13.37	----
Glidden & Curtis' Sol. Pacific Guano	2	1877	2.41	----	12.53	1.26
	2	1878	2.18	7.21	11.22	4.23
	1	1880	3.28	8.07	10.79	3.98
	2	1881	2.48	8.03	11.77	2.02



NAME.	No. of Analyses.	Year when Analyzed.	N trogen.	Phos. Acid.		Potash.
				Avail-able.	Total.	
Glidden & Curtis' Sol. Pacific Guano	1	1882	2.31	8.10	12.98	3.11
	1	1883	2.60	6.81	12.47	2.54
	1	1884	2.37	7.98	12.15	3.16
Harris' Phosphate -----	1	1881	2.93	11.95	14.67	----
	1	1882	3.08	10.69	14.50	.35
	1	1883	2.92	8.73	14.46	----
	1	1884	2.76	8.14	12.71	----
Lister Bros' Superphosphate -----	1	1880	2.20	8.59	11.03	----
	1	1883	1.69	10.74	11.68	1.89
	1	1884	2.47	11.47	11.78	2.53
Lombard & Mathewson's Superphos.	1	1878	1.59	7.45	8.35	----
	2	1879	3.12	12.23	17.08	----
	1	1880	3.61	13.25	16.22	----
	1	1881	2.91	9.69	15.39	----
	1	1882	2.46	12.43	13.11	.26
	1	1884	2.66	8.82	12.43	----
Mapes' Complete "A" Brand -----	2	1880	2.78	9.80	13.30	3.22
	1	1881	2.30	10.93	13.20	3.25
	1	1883	2.68	10.49	13.71	2.89
	1	1884	2.57	11.72	15.36	2.74
Mapes' Complete, for sandy soils ----	1	1881	5.36	5.82	7.83	6.68
	1	1883	5.29	7.84	8.96	6.61
	1	1884	5.90	7.48	9.34	8.04
Miles, G. W. Co., Superphosphate --	1	1880	1.90	7.70	13.95	1.76
	1	1881	2.20	7.56	9.70	3.46
	1	1882	1.70	8.60	10.79	1.90
	3	1883	2.11	8.15	11.44	1.70
Miller, G. W., Raw Bone Phosphate.	1	1880	3.41	9.19	12.80	5.09
	3	1883	2.92	6.29	9.90	5.64
	2	1884	3.07	8.92	11.06	5.95
Quinnipiac Fertilizer Co's Phosphate	2	1878	3.05	7.21	9.79	2.24
	2	1880	3.26	8.49	13.61	2.41
	2	1881	2.64	10.16	11.42	2.21
	1	1882	3.00	8.19	11.10	2.35
	5	1883	3.14	8.39	10.74	2.50
	1	1884	2.86	8.84	9.74	2.62
Quinnipiac Fertilizer Co's Fish and Potash.	2	1880	4.38	4.78	6.15	3.29
	1	1881	3.56	3.71	6.87	3.20
	2	1882	3.80	4.23	8.08	4.08
	2	1883	4.19	5.16	8.48	4.55
	1	1884	3.92	4.54	5.82	3.52

## HOME-MADE PHOSPHATES.

During the last two or three years a number of farmers have purchased fertilizing chemicals in the New York or Connecticut market and compounded them to suit their own purposes. Seven samples of such home-made, or more properly speaking home-mixed, fertilizers have been examined during this year.

The analyses are given in the following table :

	Webb.		Augur.	Hatha- way.	Pinney	Mason.	Bald- win.
	1188	1248	1111	1124	1101	1267	1191
Nitrogen of nitrates,-----							3.79
Nitrogen of ammonia,-----	3.70	3.52					
Nitrogen of organic matter,--			2.04	3.81	4.09	4.42	2.86
Soluble phosphoric acid,-----	6.57	9.21	7.34	none	none	none	7.06
Reverted phosphoric acid,---	4.96	2.44	3.41	3.54	3.68	2.68	.65
Insoluble phosphoric acid,---	2.55	1.02	4.10	.54	3.06	.99	.05
Potash soluble in water,-----	9.29	9.58		8.05	*7.24	†7.13	9.92
Cost per ton,-----	\$36.20	36.20		25.63		33.70	50.00
Valuation per ton,-----	\$48.54	47.36	32.67	33.77	36.21	31.96	53.95

\* Potash insoluble in water but soluble in acids, 1.74.

† " " " " " " " " " .25

Nos. 1188 and 1248 were made and sent to the station by J. J. Webb, of Hamden.

In the *N. E. Homestead* of June 21 of this year, Mr. Webb says in substance with regard to them :

“For several years I have bought chemicals and mixed them myself and always, I think, with profitable results.

This year I sent the chemicals to the state experiment station for analyses and also the mixed phosphate. My mixed phosphate cost me, including the freight to New Haven and the labor of mixing, \$36.20 per ton, and the station valuation was \$48.54, or about 34 per cent. above cost.

I bought four tons of pure dissolved bone, 17 to 18 per cent. phosphoric acid, at \$26.50 per ton ; one ton of muriate of potash, 80 per cent. of muriate guaranteed, at \$35, and one ton of sulphate of ammonia at \$62.50. Thus the total cash cost of the six tons of chemicals was \$203.50 or \$33.92 per ton. The freight to New Haven and labor of mixing brought the cost up to \$36.50.

The acid phosphate came in bags of 200 lbs. each, and was mixed by emptying one bag upon the barn floor and breaking the lumps as fine as we could with a shovel, then adding 100 lbs. of

muriate of potash, also pulverized, then another bag of phosphate, covering with 100 lbs. of sulphate of ammonia and mixing all as well as we could conveniently with shovels. The mass was sifted through a coarse sieve. The lumps were thrown aside for further pulverization, after which they were returned. The prepared fertilizer was put in barrels, about 200 lbs. each, and set aside until wanted for use. This was done at an expense of 50 to 75 cents per ton. The goods were in better order for sowing than any phosphate I have ever bought."

Under date of Nov. 17 Mr. Webb writes to the station: "I was better satisfied with the mixture than with any prepared fertilizer I ever bought. My men used it on their gardens without any manure and had good crops and were highly pleased with it."

Mr. Webb adds in his published article: "We want the goods, and from my experience I think I cannot afford to do without them. But are the manufacturers doing the best they can afford by us? Are we not paying more than our share for long credits on goods sold at the South? Is it not more profitable for us to take the amount needed from the savings bank, if necessary, where it is drawing but 4 to 6 per cent. and pay cash for the goods, and save, say 20 per cent. or more?"

No. 1111 was made by C. P. Augur, of Whitneyville, but particulars with regard to its manufacture and cost have not been received.

Nos. 1124, 1101 and 1267 are tobacco fertilizers; the first from F. B. Hathaway, the second from R. E. Pinney, both of Suffield, and the last from John Mason, of Warehouse Point. Probably all were compounded by the same formula and at about the same cost. With regard to 1124, Mr. Hathaway writes:

"The fertilizer in question has given good satisfaction here.

"It is composed of:

1,000 pounds cotton seed meal, costing .....	\$13.63
500 pounds potash, costing .....	9.75
500 pounds lime, costing .....	2.25
	<hr/> \$25.63

"This is what it cost us in car-load lots last spring.

"It should be well mixed and put up in 100 pound bags.

"The expense of mixing won't exceed 50 cents per ton.

"The potash used was same as sample (No. 1149) analyzed for me at Station last spring. The cotton seed and lime should both be the best that can be had and the fertilizers thus mixed should

be applied to tobacco at the rate of two tons per acre. This makes a fertilizer analyzing about 30 per cent. more than the leading tobacco fertilizers and costing about the same per acre."

The "Potash" of Mr. Hathaway's formula is cotton hull ashes (see page 70). In this fertilizer there is no chlorine.

1191 is a sample of phosphate mixed for a potato fertilizer by M. S. Baldwin of Naugatuck.

Under date of Feb. 11 Mr. Baldwin writes: "The subject of chemical fertilizers has been discussed by our club and they wish me to ask you in what materials or in what form it is cheapest or most economical to buy nitrogen and phosphoric acid so that they will be in the most available form for crops to take up. To obtain potash is high grade muriate potash salts the best?"

To Mr. Baldwin was replied as follows: "The cost of nitrogen in nitrate of soda, dried blood and ammonia salts is about the same at present, rather higher in ammonia salts than in the others.

"Available phosphoric acid is cheapest in the high grade plain superphosphates, containing from 13-15 per cent. of phosphoric acid soluble in water. For most crops potash can be most cheaply supplied in high grade muriate of potash. We would suggest that you inquire of wholesale dealers as to their prices of nitrate of soda, guaranteed 95 per cent.; sulphate of ammonia, guaranteed 95 per cent.; dried blood, asking for nitrogen, guaranteed; plain superphosphate, guaranteed 13 to 15 per cent. water-soluble phosphoric acid, and muriate of potash, guaranteed 80 per cent. The goods to be in packages, delivered free on board in New York. You can then, knowing the freight rates, figure exactly what the things will cost you in Naugatuck."

Mr. Baldwin seems to have figured on the cost of fertilizing chemicals to good purpose. With regard to his home-mixed potato fertilizer he writes:

"I have used ——— and ——— potato fertilizer for raising my crop of potatoes each year for the last eight or ten years till this season, when I used that of which you analyzed a sample (1191). I have this season the best crop that I ever raised."

The average cost of the five fertilizers whose costs and valuations are given is \$36.34, the average valuation \$43.12, the difference \$6.78, or 15.7 per cent. of the valuation. With only one exception the valuation of these goods is considerably above their cost.

The mechanical condition of the goods was in all cases unexceptionable. They were fine and dry.



## SPECIAL MANURES.

[See pages 54-57.]

Under this head are included all those fertilizers which are sold with a claim, tacit or expressed, that they are compounded with special reference to the wants of particular crops, and are specially adapted to feed such crops. In the opinion of the Director of this Station, "Special Fertilization" by the use of such fertilizers, implies a uniformity of soil that is not commonly met with in this State, and a greater knowledge of the characters of the soil and the laws of vegetable nutrition than we now possess.

The matter has been fully discussed in preceding reports, and needs no further mention here.

The special manures themselves are, however, good fertilizers, and on the average during this year have furnished plant food in a somewhat more concentrated form than other superphosphates and at a considerably cheaper rate, although their average ton-cost has been higher. This will appear from the following comparison:

	Average Cost.	Average Valuation.	Differ- ence.	Percentage difference reckoned on Valuation.
* Superphosphates (52),-----	\$40.73	33.13	7.60	22.90
Special manures (20),-----	49.95	44.20	5.75	13.00

The question arises, Why should the difference between cost and valuation be less in the case of special manures than in other superphosphates? It might be answered that the special manures are compounded mostly by those who manufacture on a large scale and are thus enabled to do the work of compounding more cheaply than smaller operators. If this is the explanation, then the superphosphates which are not specials, made by those same firms ought to show about the same percentage difference between cost and valuation that their specials show. But they do not. The average cost of all the nitrogenous superphosphates made by the same firms whose special manures are here tabulated, is \$38.80, average valuation \$32.28, average difference between cost and valuation \$6.52, which is 20.2 per cent. of the valuation as against 22.9 per cent., the average in the case of *all* nitrogenous superphosphates.

Probably this difference is partly explained by the fact that the specials, almost without exception, have contained very considerable amounts of ammonia salts. Nitrogen in form of ammonia has been valued by the Station at 22 cents per pound, as agreed



by the Directors of the Massachusetts, New Jersey and Connecticut Stations last spring. It is now seen that this valuation was too high, and 18 or 19 cents would have been fairer. Nitrogen in form of sulphate of ammonia has been bought by farmers in this State in ton lots as low as 16 cents per pound during the last season.

A further explanation of the more favorable relation of valuation to cost in the case of the special manures, is that pound for pound they contain more valuable material. The cost of mixing and selling a high grade article can hardly be greater than that of a lower grade. But in the first case, this cost of the preparation of the goods *goes further* with the farmer than in the latter case. To illustrate: suppose we have two lots of fertilizers unmixed. One contains 250 pounds of muriate of potash, 250 pounds of nitrate of potash and 600 pounds of plain superphosphate, with as much more moisture, sand, peat or plaster, so that the total weight is 2,200 pounds. Its cost is \$19. This we propose to mix and apply to an acre of land. The other lot contains 500 pounds of muriate, 500 pounds of nitrate and 1,200 pounds of superphosphate, without any "ballast." It also weighs 2,200 pounds and costs \$38. To sift, pulverize and mix thoroughly the raw materials in each lot we will assume costs \$6. Since the weight of the two lots is the same, the labor of handling and mixing will not be very unlike.

When the fertilizers are spread on the land the first lot covers one acre and costs \$19 plus \$6=\$25. The second lot covers two acres and costs \$38 plus \$6=\$44, or \$22 per single acre. Here, then, is a saving of \$3 per acre, and a saving it is to be noticed, made by buying the highest priced fertilizer instead of the low priced one. The \$25 goods are the more expensive, the \$44 goods are the cheaper, if both are rationally used. We are not now arguing for specials as against other superphosphates, but for high grade goods, whether specials or not, as against the more expensive low grade goods.

Nine of the specials were up to their guarantees in all respects; in nine, one ingredient was not up to the guarantee, and two were deficient in respect to two ingredients.

In the following table are given all the analyses of various brands of special manures which have been made since the establishment of the Station in 1877, and which serve to show any changes in the formulas as well as the variations in the quality of the goods.

## COMPARISON OF SPECIAL MANURES OF THE SAME BRAND.

NAME.	No. of Analyses.	Year.	Nitrogen.	Phos. Acid.		Potash.
				Avail-able.	Total.	
Baker's Potato Manure .....	2	1882	3.83	4.95	5.03	9.68
	1	1883	3.26	7.54	7.97	9.76
	1	1884	3.46	5.88	6.55	9.79
Baker's Oat Manure .....	1	1881	4.41	5.43	7.51	11.12
	1	1884	4.42	5.24	5.38	10.13
Baker's Tobacco Manure .....	1	1881	4.43	5.16	6.44	11.98
	1	1882	4.76	2.66	2.68	8.56
	1	1883	4.85	4.93	5.32	9.03
	1	1884	5.01	5.18	5.53	9.47
Baker's Corn Manure .....	3	1882	4.52	5.61	5.88	8.49
	1	1883	4.15	6.50	7.28	7.91
	1	1884	3.63	6.41	6.96	7.70
Baker's Grass Manure .....	1	1883	4.87	5.29	6.51	8.19
	1	1884	4.64	5.40	6.44	7.95
Chittenden's Complete Manure for Grain.	1	1883	4.24	8.25	9.09	5.37
	1	1884	3.51	7.03	8.93	6.49
Chittenden's Root Fertilizer .....	2	1883	3.98	7.84	8.79	5.78
	1	1884	4.22	7.67	9.02	5.56
Forrester's Special Potato Fertilizer.	1	1878	5.65	7.57	7.65	11.42
	2	1879	4.69	5.39	7.10	9.68
	1	1880	4.76	5.44	7.53	11.33
	1	1881	3.38	5.44	5.72	9.50
	1	1882	3.78	6.91	7.22	10.27
	1	1884	4.68	7.87	8.55	9.83
Forrester's Special Grass Fertilizer..	1	1878	5.56	4.08	5.12	12.11
	1	1880	5.44	2.12	3.07	7.45
Forrester's Special Onion Fertilizer..	1	1879	7.36	4.49	4.84	7.39
	1	1880	7.40	4.63	5.63	7.25
	2	1881	5.24	5.16	5.41	6.53
	1	1882	5.53	6.23	6.63	5.69
	1	1884	5.58	9.45	9.45	7.58
Forrester's Special Cabbage Fertilizer	1	1879	6.27	6.06	6.51	7.44
	1	1880	5.62	6.26	6.82	8.16
Forrester's Special Corn Fertilizer --	1	1879	7.91	4.20	4.49	8.30
	1	1880	4.86	6.07	7.08	14.56
	2	1881	5.04	6.79	7.20	7.65
	1	1882	5.30	7.78	8.56	8.06
	1	1884	4.71	9.18	9.89	7.84
Forrester's Special Oat Manure .....	1	1880	6.62	4.96	5.94	9.18
	1	1881	4.79	5.99	6.32	8.61
Lister's Potato Fertilizer .....	1	1883	3.79	8.13	8.87	8.43
	1	1884	3.74	9.13	9.27	6.72
Mapes' Grass and Grain Top Dressing	1	1879	4.28	5.99	7.31	3.65
	1	1880	4.74	7.49	8.79	6.61
	1	1883	4.11	7.09	9.76	5.98

SPECIAL MANURES.—*Continued.*

NAME.	No. of Analyses.	Year.	Nitrogen.	Phos. Acid.		Potash.
				Avail-able.	Total.	
Mapes' Potato Fertilizer-----	1	1878	3.67	4.55	6.04	14.82
	1	1880	3.67	9.44	10.94	6.35
	1	1882	3.94	7.86	10.04	6.10
	2	1883	4.22	7.98	11.83	6.55
	1	1884	4.27	8.92	12.66	6.82
Mapes' Corn Manure-----	1	1880	3.67	10.20	11.86	7.21
	1	1881	3.63	9.44	12.04	5.67
	2	1882	3.77	10.63	12.32	7.04
	1	1884	4.04	8.80	12.51	6.82
Mapes' Tobacco Manure, Ct. Brand--	1	1881	4.86	5.61	7.46	7.42
	1	1882	3.62	7.77	9.41	9.03
	1	1883	6.41	7.64	8.84	6.70
	1	1884	5.26	7.65	10.09	7.44
Mapes' Tobacco Manure, for use with Stems.	2	1882	5.73	7.54	9.74	4.36
	1	1883	5.31	9.60	10.91	4.35
	1	1884	6.09	11.24	13.67	3.70
Stockbridge Grain Manure-----	2	1878	6.06	5.51	6.33	6.87
	1	1880	4.71	6.00	6.42	6.75
	1	1881	4.04	6.81	8.78	5.29
	2	1882	3.83	6.89	8.78	5.25
	1	1883	3.83	7.12	5.36	3.93
Stockbridge Vegetable Manure-----	1	1878	3.49	6.39	6.57	10.22
	-	1879	3.82	7.02	7.21	8.84
	2	1881	3.12	6.81	7.99	4.89
	2	1882	3.40	7.47	9.95	4.90
	1	1883	2.94	6.65	8.48	6.10
	1	1884	3.35	6.72	8.76	10.12
Stockbridge Kitchen Garden Manure	1	1878	4.57	5.62	5.79	7.22
Stockbridge Squash, Cucumber and Tomato Manure.	1	1878	5.06	4.05	4.05	7.66
Stockbridge Grass Top Dressing----	1	1878	8.68	2.11	2.11	10.38
	1	1879	6.10	4.09	4.45	7.52
	1	1882	4.05	6.72	9.49	3.69
Stockbridge Top Dressing and For- age Crop.	1	1883	4.04	6.40	7.89	4.05
	1	1883	3.29	7.25	10.86	4.06
	1	1884	3.81	7.01	8.75	3.60
Stockbridge Lawn Dressing-----	1	1878	7.99	5.17	5.17	6.35
Stockbridge Grain Manure-----	1	1881	3.20	7.46	7.59	5.89
	1	1882	3.48	6.57	9.14	6.83
	1	1883	3.39	7.42	10.81	5.31
	1	1884	2.91	7.98	9.10	5.51
Stockbridge Onion Manure -----	1	1879	3.91	6.36	6.49	8.32
	1	1880	3.10	5.34	5.79	7.94
Stockbridge Tobacco Manure-----	1	1879	5.70	1.43	1.70	7.36
	1	1880	6.11	6.09	6.29	5.62
Stockbridge Root Manure-----	2	1880	3.95	5.53	6.20	7.02
Stockbridge Seeding Down Manure	1	1883	3.37	7.46	10.92	5.88

## SPECIAL MANURES.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and sent by
1303	Mapes' Tobacco Manure, for use with stems.	Mapes' Formula and Peruvian Guano Co., New York.	Mapes' Conn. Valley Branch, Hartford.	Station Agent.
1271	Forrester's Onion Manure.	G. B. Forrester, 169 Front St., New York.	Manufacturer.	S. B. Wakeman, Saugatuck.
1212	Baker's Special Tobacco Manure.	H. J. Baker & Bro., 215 Pearl St., New York.	Southmayd & Gardiner, Middletown.	Station Agent.
1304	Mapes' Tobacco Manure, Ct. Brand.	Mapes' Formula and Peruvian Guano Co., New York.	Mapes' Conn. Valley Branch.	"
1293	Bosworth's Potato Phosphate.	Bosworth Bros., Putnam.	John A. Paine, Danielsonville.	"
1274	Forrester's Corn Manure.	G. B. Forrester, 169 Front St., New York.	Manufacturer.	S. B. Wakeman, Saugatuck.
1275	" Potato Manure.	G. B. Forrester, 169 Front St., New York.	"	"
1302	Baker's Special Oat Manure.	H. J. Baker & Bro., 215 Pearl St., New York.	Tolles & McKwen, Naugatuck.	Station Agent.
1318	Read & Co's Matchless Tobacco Manure.	Read & Co., New York City.	A. C. Sternberg, Hartford.	Manufacturer.
1138	Mapes' Potato Manure.	Mapes' Formula and Peruvian Guano Co., 158 Front St., N. Y.	R. B. Bradley & Co., New Haven.	Station Agent.

SPECIAL MANURES.—*Continued.*

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and sent by
1160	Bowker's Vegetable Manure.	Bowker Fertilizer Co., 43 Chatham St., Boston.	Coburn & Gale, Hartford.	Station Agent.
1226	Chittenden's Complete Root Fertilizer.	National Fertilizer Co., Bridgeport.	Manufacturer.	Josiah Hawkins, Southport.
1131	Mapes' Corn Manure.	Mapes' Formula and Peruvian Guano Co., New York.		Station Agent.
1300	Baker's Complete Grass Manure.	H. J. Baker & Bro., 215 Pearl St., New York City.	"	"
1142	Lister Bros' Potato Manure.	Lister Bros., Newark, N. J.	"	"
1307	Chittenden's Complete Fertilizer for Grain.	National Fertilizer Co., Bridgeport.	E. A. Watrous, Meriden.	"
1155	Bowker's Corn and Grain Manure.	Bowker Fertilizer Co., 43 Chatham St., Boston.	Coburn & Gale, Hartford.	"
1136	Baker's Special Corn Manure.	H. J. Baker & Bro., 215 Pearl St., New York City.	R. B. Bradley & Co., New Haven.	"
1139	Baker's Complete Potato Manure.	H. J. Baker & Bro., 215 Pearl St., New York City.	"	"
1286	Stockbridge Forage Crop Manure.	Bowker Fertilizer Co., New York and Boston.	Coburn & Gale, Hartford.	"



## SPECIAL MANURES—ANALYSES AND VALUATIONS.

Station No.	Name or Brand.	Nitrogen.						Phosphoric Acid.						Potash.		Valuation per Ton.	Valuation Exceeds Valuation Ex-
		From Nitrates.	From Ammonia.	From Organic Matters.	Total Nitrogen Found.	Nitrogen Guaranteed.		Soluble.	Reverted.	Insoluble.	Total Phos. Acid Found.	Phos. Acid Guaranteed.	Available.	Found.	Guaranteed.		
1303	Mapes' Tobacco Manure for use with stems-----	.81	3.34	1.94	6.09	5.35		7.85	3.39	2.43	13.67	10.50	11.24	3.70	3.50	\$54.61	\$2.61
1271	Forrester's Onion Manure-----	---	5.53	---	5.58	5.35		9.05	.40	11.75	9.45	---	9.45	7.58	7.00	48.50	2.33
1212	Baker's Special Tobacco Manure-----	---	4.34	.67	5.01	4.54		3.91	1.27	.35	5.53	---	5.18	9.47	8.00	47.50	1.56
1304	Mapes' Tobacco Manure, Conn. Brand-----	.84	3.97	.45	5.26	4.74		5.42	2.23	2.44	10.09	7.75	7.65	7.44	7.75	52.00	1.87
1283	Bosworth's Potato Phosphate-----	---	2.17	.60	2.77	2.50		5.87	3.33	2.24	11.44	10.00	9.20	7.89	7.50	42.00	2.02
1274	Forrester's Corn Manure-----	---	4.71	---	4.71	3.91		8.73	.45	.71	9.89	---	9.18	7.84	8.00	49.50	3.03
1275	" Potato Manure-----	---	4.68	---	4.68	3.70		7.06	.81	.68	8.55	---	7.87	9.83	10.00	49.50	3.15
1302	Baker's Special Oat Manure-----	3.61	---	.81	4.42	4.12		4.86	.38	.14	5.38	---	5.24	10.13	9.00	47.00	3.88
1318	Read & Co's Matchless Tobacco Manure-----	---	4.85	---	4.85	5.35		5.74	1.20	.92	7.86	9.00	6.66	4.59	4.50	46.00	4.60

## SPECIAL MANURES.—Continued.

Station No.	Name or Brand.	Nitrogen.					Phosphoric Acid.						Potash.		Valuation per Ton.	Cost per Ton.	Cost Exceeds Valuation.
		From Nitrates.	From Ammonia.	From Organic Matters.	Total Nitrogen.	Nitrogen Guaranteed.	Soluble.	Reverted.	Insoluble.	Total Phosphoric Acid Found.	Phosphoric Acid Guaranteed.	Available.	Found.	Guaranteed.			
1138	Mapes' Potato Manure	.91	1.96	1.40	4.27	3.70	5.85	3.07	3.74	12.66	8.00	8.92	6.82	6.00	\$44.96	\$51.00	\$6.04
1160	Stockbridge Potato Manure	---	1.09	2.16	3.25	3.25	6.21	.51	2.04	8.76	8.00	6.72	10.12	7.00	38.68	45.00	6.32
1226	Chittenden's Complete Root Fertilizer	.77	2.37	1.08	4.22	3.29	6.54	1.13	1.35	9.02	8.00	7.67	5.56	6.00	38.57	45.00	6.43
1131	Mapes' Corn Manure	.87	2.16	1.01	4.04	3.70	6.07	2.73	3.71	12.51	10.00	8.80	6.82	6.00	42.86	*50.00	7.14
1300	Baker's Complete Grass Manure	.94	3.12	.58	4.64	3.70	4.72	.68	1.04	6.44	5.00	5.40	7.95	7.50	37.77	45.00	7.23
1142	Lister Bros' Potato Manure	---	2.69	1.05	3.74	3.29	8.88	.25	.14	9.27	---	9.13	6.72	7.00	40.93	50.00	9.07
1307	Chittenden's Complete Fertilizer for Grain	---	---	3.51	3.51	3.70	5.08	2.55	1.30	8.93	8.00	7.63	6.49	5.00	35.48	45.00	9.52
1155	Stockbridge Grain Manure	---	1.55	1.76	3.31	3.29	7.58	.40	1.12	9.10	7.00	7.98	5.51	4.00	35.43	45.00	9.57
1136	Baker's Special Corn Manure	---	3.08	.55	3.63	4.12	5.95	.46	.55	6.96	---	6.41	7.70	7.00	35.53	*50.00	14.47
1139	Baker's Complete Potato Manure	---	2.82	.54	3.36	3.29	5.30	.58	.67	6.55	---	5.88	9.79	10.00	35.34	47.50	12.16
1286	Stockbridge Forage Crop Manure	1 1/2	1.03	1.66	3.81	4.12	6.14	.87	1.74	8.75	7.00	7.01	3.60	4.00	33.68	50.00	16.32

\* Reckoned from cost per bag (200 lbs.).

## BONE MANURES.

In the following tables are given analyses of 31 articles of this class. In a number of cases to meet the requirement of the law, manufacturers' samples have been analyzed, because the goods were not found in market by the station agents.

The prices of bone ground in this State, given in the table, are mostly the prices asked at the factories, delivered on board.

The samples analyzed this year vary greatly in quality. Hard, firm bones contain more nitrogen and phosphoric acid than the softer ones, which are often wet or greasy. "Kitchen Bone," and all bone gathered by pickers is apt to have some sand or earth adhering to it or lodged in the cavities of the bone. For these reasons "pure ground bone," so called, is not a thing of very definite composition.

Some manufacturers of bone black have left after picking out what is suitable for that purpose, a quantity of damp, soft bone, which is mixed with a dryer or preservative, plaster or salt cake, and sold as a fertilizer.

1145, 1284, and 1290 are examples of bone which is "ballasted" with drying or preservative material. 1290 also contains 2.00 per cent. of potash. These articles are sold as "ground bone," but their guarantee indicates that they are not offered as *pure* bone.

The low valuation of Quinnipiac Bone No. 1158 is due both to the small amount of nitrogen and phosphoric acid in it and also to its mechanical condition. More than  $\frac{3}{5}$  of it by weight is in pieces that will not pass a  $\frac{1}{8}$  in. mesh.

Nos. 1242, 1240, 1229 all contain very considerable amounts of sand and other worthless matter insoluble in strong acids. 1242 contains 7.07 per cent. insoluble, 1240 contains 10.98 per cent., and 1229 33.49 per cent. "Kitchen Bones" gathered by bone-pickers would naturally have some sand adhering to them but when the ground bone contains over 5 per cent. of insoluble matter consisting of sand, soil, coal-ashes and like "dirt," or when the amount of phosphoric acid falls below 19 per cent., there is reason to complain of adulteration, unless the guarantee indicates that the article is not pure ground bone.

1229 is a sample with regard to which conflicting statements have reached the Station. The sender claims to have sold to the grinder "7600 lbs. of pure raw Bone at one cent per lb., with the

## BONE MANURES.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and sent by
<b>1246</b> <b>1194</b>	Peter Cooper's Ground Bone. Rogers & Hubbard Co. Damp Bone Saw Dust.	Peter Cooper's Glue Factory. Rogers & Hubbard Co., Middle-town.	Manufacturer. "	J. M. Milbank, Greenfield Hill. Manufacturer.
<b>1237</b> <b>1308</b> <b>1146</b>	Anderson's Ground Bone. Bosworth Bros. Ground Bone. Rogers & Hubbard Damp Bone Sawings.	W. H. Anderson, Putnam. Bosworth Bros., Putnam. Rogers & Hubbard Co., Middle-town.	" " H. K. Brainard, Thompsonville.	" " Station Agent.
<b>1273</b>	Forrester's Pure Ground Bone.	Geo. B. Forrester, 159 Front St., New York City.	Manufacturer.	S. B. Wakeman, Saugatuck
<b>1231</b> <b>1197</b>	E. Smith's Ground Bone. Pure Ground Raw Knuckle Bone, "Grade A" Extra Fine.	E. Smith, South Canterbury. Rogers & Hubbard Co., Middle-town.	" J. B. Barstow, Norwich.	Manufacturer. Station Agent.
<b>1266</b> <b>1156</b>	F. C. Slade's Ground Bone. Shoemaker's Swift Sure Bone Meal	F. C. Slade, Oakville. M. L. Shoemaker & Co., Philadelphia, Penn.	Manufacturer. F. Ellsworth, Hartford.	" "
<b>1200</b> <b>1239</b> <b>1195</b>	Peck Bros' Bone. Peck Bros' Boiled Bone. Pure Ground Raw Knuckle Bone Grade "Meal."	Peck Brothers, Northfield. Peck Brothers, Northfield. Rogers & Hubbard Co., Middle-town.	Manufacturer. Manufacturer. J. B. Barstow, Norwich.	C. H. Cables, Thomaston. Manufacturer. Station Agent.
<b>1265</b> <b>1196</b>	G. W. Miller's Ground Bone Rogers & Hubbard's Pure Ground Bone, Grade A X.	G. W. Miller, Middlefield. Rogers & Hubbard Co., Middle-town.	Manufacturer. Wilson & Burr, Middletown.	" "

BONE MANURES.—*Continued.*

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and sent by
1219	Darling's Fine Ground Bone.	L. B. Darling & Co., Pautucket, R. I.	J. B. Barstow & Co., Norwich.	Station Agent.
1230	P. W. Bennett's Ground Bone.	P. W. Bennett, Rock Fall.	Manufacturer.	Manufacturer.
1238	Peck Bros' Raw Kitchen Bone.	Peck Brothers, Northfield.	"	"
1199	Atwood Brothers' Bone.	Atwood Brothers, Oakville.	"	C. H. Cables, Thomaston.
1242	" " Ground Bone.	" " " "	"	Station Agent.
1241	F. C. Slade's Bone.	F. C. Slade, Oakville.	"	C. C. Churehill, Torrington.
1145	Lister Bros' Celebrated Ground Bone.	Lister Bros., Newark, N. J.	R. B. Bradley & Co., N. Haven.	Forwarded by Peck Bros.
1156	Quinnipiac Bone.	Quinnipiac Co., Wallingford.	S. J. Hall, Meriden.	Station Agent.
1284	Preston's Ground Bone.	H. Preston & Sons, Green Point, L. I.	J. B. Merrow & Sons, Merrow.	"
1240	Atwood Bros' Ground Bone.	Atwood Brothers, Oakville.	Atwood Bros., Oakville.	"
1290	E. Frank Coe's Ground Bone.	E. F. Coe, 16 Burling Slip, New York.	Buck, Durkee & Stiles, Williamantic.	C. C. Churchhill, Torrington. Forwarded by Peck Bros. Station Agent.
1229	Ground Bone.			
1185	Flour of Bone.			
1309	G. H. Harris & Son's Ground Bone.	G. H. Harris & Son, Eagleville.	Manufacturer.	M. W. Terrill, Middlefield.
1127	Meat and Bone.	Adams & Thomas, Springfield, Mass.	Adams & Thomas.	Manufacturer. Geo. Wilcox, Shaker Station.
1330	Buckhorn Sawings.	Rogers & Hubbard, Middletown.		Chas. Fairchild, Middletown.



## BONE MANURES.—ANALYSES AND VALUATIONS.

Station No.	Name or Brand.	Nitro- gen.	Phos. Acid.	Finer than				Coarser than $\frac{1}{8}$ inch.	Cost per ton.	Valua- tion per ton.	Valua- tion exceeds cost.
				$\frac{1}{50}$ inch.	$\frac{1}{25}$ inch.	$\frac{1}{12}$ inch.	$\frac{1}{6}$ inch.				
1246	Peter Cooper's Ground Bone	1.48	31.65	50	15	24	11		\$27.00	\$39.71	\$12.71
1194	Rogers & Hubbard's Damp Bone Saw Dust	2.49	17.09	93	6	1			25.00	29.23	4.23
1237	Auderson's Ground Bone	2.15	30.31	77	22	1			40.00	43.19	3.19
1308	Bosworth Bros' Ground Bone	4.09	21.95	36	32	29	3		35.00	37.26	2.26
1146	Rogers & Hubbard's Damp Bone Sawings	2.11	16.54	93	6	1			25.00	27.26	2.26
1273	Forrester's Pure Ground Bone	3.97	22.99	80	20				39.00	41.00	2.10
1197	Rogers & Hubbard Pure Raw Knuckle Bone "Gr. A." Ex. F.	4.12	24.19	30	23	47			38.00	39.10	1.10
1231	E. Smith's Ground Bone	3.93	20.59	32	38	24	6		34.00	35.08	1.08
1266	F. C. Slade's Ground Bone	4.15	21.59	29	36	14	10	11	35.00	35.57	.57
1156	Shoemaker's Swift Sure Bone Meal	6.62	19.82	59	31	10			45.00	45.23	.23
1200	Peck Brother's Bone	3.97	22.21	15	21	42	18	4	35.00	34.29	.70
1239	" Boiled Bones	4.15	22.46	14	15	30	35	6	35.00	33.95	1.05
1195	Rogers & Hubbard Pure Raw Knuckle Bone Grade "Meal"	4.02	23.64	34	34	32			40.00	38.94	1.06
1265	Miller's Ground Bone	4.17	21.10	26	23	32	19		36.00	34.90	1.10



agreement that he would take 1000 lbs. of ground Bone as part payment, the balance to be cash." The sender writes that the grinder "makes it a part of his business to grind and sell Bone to the farmers of this vicinity." He also writes, "The price I paid ——— for the ground Bone was \$35.00 per ton."

The grinder of this Bone, in verbal statement, was understood to say on the other hand, that he does "not sell bone but grinds bone for those who bring it," that "this bone was brought by and ground for the sender of the sample, and that it was so very sandy as to greatly injure the mill."

That Bones should carry so much as *one-third their weight* of sand, coal, and coal-ashes is difficult to understand. That various matters are often thrown into bone-mills to clear the grinding surfaces is well known. That the sample **1229** fairly represents the lot from which it was taken the Station cannot assert. Under these circumstances the results of the analysis are given but the names of the parties concerned are withheld.

**1185**, **1237**, and **1246** are articles which have been boiled or steamed in the glue factory to remove their gelatine, etc. In consequence, the larger part of the nitrogen which they originally contained has been removed and the percentage amount of phosphoric acid is higher than in raw bone. The articles are fine and very dry. They are an excellent source of phosphoric acid in assimilable form. It is stated by the manufacturer that Nos. **1238** and **1239** are not brands entered for sale, but are ground and mixed to make the "Pure Ground Bone" No. **1200**.

#### DRY GROUND FISH.

Five samples of Fish Scrap offered for sale in this State have been examined during the year. In all cases the goods have been considerably above their guarantee, and with one exception the valuation has been above the cost.

**1217** was very wet, containing 27.71 per cent. of moisture. The "Manufacturer's Sample" of the same goods contained only 22.26 per cent. of water, and it is therefore possible that **1217** is damaged goods and does not fairly represent the brand.

The average cost of these five samples has been \$39.00, and the average valuation \$42.34.

## DRY GROUND FISH.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Station Agent.	Sampled and sent by
1159	Stearns' Dry Ground Fish Guano.	Stearns & Co., New York and Fall River, Mass.	A. S. Russell, Meriden.		
1285	Wilcox Fish Guano, Dry Ground.	L. Wilcox & Co., Mystic Bridge.	J. A. Lewis, Willimantic.	"	
1201	Bowker's Dry Ground Fish.	Bowker Fertilizer Co., 43 Chatham St., Boston, Mass.	Usher & Tinker, Plainville.	"	
1135	Quinnipiac Dry Ground Fish.	Quinnipiac Fertilizer Co., New London.	Olds & Whipple, Hartford.	"	
1217	Preston's Dried and Ground Fish Guano.	H. Preston & Sons, Green Point, L. I.	Wilson & Burr, Middletown.	"	

## DRY GROUND FISH—ANALYSES AND VALUATIONS.

Station No.	Name or Brand.	Nitrogen.					Phosphoric Acid.				Cost per Ton.	Valuation per Ton.	Valuation Exceeds Cost.
		From Ammonia.	From Organic Matter.	Total Nitrogen Found.	Total Nitrogen Guaranteed.		Insoluble.	Total Phos. Acid Found.	Phos. Acid Guaranteed.				
1159	Stearns' Dry Ground Fish	.68	8.13	8.81	7.40	.80	4.79	2.89	8.48	7.00	\$40.00	\$48.33	\$8.33
1285	Wilcox Fish Guano, Dry Ground	---	8.54	8.54	7.40	1.85	4.70	.53	7.08	6.55	40.00	46.80	6.80
1210	Bowker's Dry Ground Fish	---	8.44	8.44	6.60	.90	3.78	2.73	7.41	4.68	40.00	44.82	4.82
1135	Quinnipiac Dry Ground Fish	.46	7.79	8.25	7.40	1.22	3.37	1.97	6.56	6.00	40.00	43.46	3.46
1217	Preston's Dried and Ground Fish Guano.	---	4.26	4.26	4.72	2.01	3.60	.85	6.46	5.00	35.00	28.30	6.70

## NITRATE OF SODA.

**1244.** Nitrate of Soda. Sold by H. J. Baker & Bro., New York City. Sampled and sent by J. M. Milbank, Greenfield Hill.

**1192.** Nitrate of Soda. Sold by Geo. B. Forrester, New York City. Sampled and sent by M. S. Baldwin, Naugatuck.

**1182.** Nitrate of Soda. Sold by Mapes F. & P. G. Co., New York. From stock bought by T. N. Bishop, Plainville. Sampled by Station Agent.

**1176.** Nitrate of Soda. Sold by Mapes F. & P. G. Co., New York. Sampled and sent by C. H. Cables, Thomaston.

	1244	1192	1182	1176
Nitrogen Guaranteed, .....		16.1	15.6	15.8
Nitrogen found, .....	16.13	16.02	15.90	15.95
Equivalent nitrate of soda, ---	97.93	97.30	96.55	96.84
Cost per ton, .....	\$61.50	56.00	52.50	54.50
Nitrogen costs per lb., .....	19.1 cts.	17.8 cts.	16½ cts.	17.1 cts.

Under date of January 17, 1884, Marshall Marsh, of New Milford, writes:

"I send you a sample of saltpetre bought of Martin Hungerford, Gaylordsville, Ct., which I wish you would please analyze and send me the result. This saltpetre was guaranteed to be pure and such as was used in the manufacture of powder. Cost 6½ cents per pound."

The sample, No. **1063**, had the following composition :

Moisture, .....	1.25
Soda, .....	45.84
Potash, .....	none
Chlorine, .....	37.96
Nitric acid, .....	23.22
Sulphuric acid, .....	trace
Other matters by difference, .....	.28
	<hr/> 108.55
Deduct oxygen equivalent to chlorine, .....	8.55
	<hr/> 100.00

Its proximate composition may be represented as follows :

Sodium nitrate (Chili saltpetre), .....	36.55
Sodium chloride (common salt), .....	61.92
Water, .....	1.25
Other matters, .....	.23
	<hr/> 100.00



To Mr. Marsh was written :

"The sample contains, as you see, no trace of saltpetre, 'such as is used in the manufacture of gunpowder,' that is, nitrate of potash. It is a mixture of a little more than one-third Chili saltpetre, or soda saltpetre, and nearly two-thirds common salt. Such a mixture could only be applied to land with great caution, on account of this large proportion of salt.

"With regard to its commercial value : Pure Chili saltpetre, nitrate of soda, can be bought in this State for \$70.00 per ton, or  $3\frac{1}{2}$  cents per pound. This material is not worth as a fertilizer more than one-third to one-half as much."

#### SULPHATE OF AMMONIA.

**1257.** Sulphate of Ammonia. Sold by National Fertilizer Company, Bridgeport. Sampled and sent by R. A. Moore, Kensington.

**1173.** Sulphate of Ammonia. From factory of E. H. Wardwell, in New Haven. Purchased in New York, sampled and sent by J. J. Webb, Hamden.

**1102.** Sulphate of Ammonia. From factory of E. H. Wardwell, in New Haven. Sampled by Station Agent.

	1257	1173	1102
Nitrogen, .....	20.63	20.37	20.22
Equivalent ammonia, .....	25.05	24.74	24.56
"    sulphate ammonia, .....	97.26	96.03	95.32
Cost per ton, .....	\$65.00	62.50	
Nitrogen costs per lb., .....	16.3 cts.	15.3 cts.	

#### MEAT AND PLASTER.

**1312** is a sample of meat and plaster, made by W. Burr Hall, of Wallingford, and sent to the Station by him as manufacturer's sample. The analysis is as follows :

Nitrogen, .....	1.60
Phosphoric acid, .....	.77

The amount of plaster was not determined. The valuation is \$6.68 per ton for the phosphoric acid and nitrogen.

## LINSEED MEAL AND CASTOR POMACE.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and sent by
1080	Castor Pomace.	H. J. Baker & Bro., 215 Pearl St., New York City.	Manufacturer.	Manufacturer.
1315	R. B. Brown Oil Co's Castor Pomace.	R. B. Brown Oil Co., St. Louis, Mo.	"	"
1154	Collier's Castor Pomace.	Collier White Lead and Oil Co., St. Louis, Mo.	Olds & Whipple, Hartford.	Station Agent.
1306	St. Louis Lead and Oil Co's Castor Pomace.	St. Louis Lead and Oil Co., St. Louis, Mo.	F. Ellsworth, Hartford.	"
1081	Linseed Meal. Same as fodder CLXXIV.	-----	Wilder & Puffer, Springfield, Mass.	H. H. Austin, Suffield.

## LINSEED MEAL AND CASTOR POMACE—ANALYSES AND VALUATIONS.

Station No.	Name or Brand.	Nitro-gen.	Phos. Acid.	Potash.	Cost per Ton.	Valuation per Ton.
1080	H. J. Baker's Castor Pomace	5.33	1.68	1.06	-----	\$22.11
1315	R. B. Brown Oil Co's Castor Pomace	5.35	1.80	1.19	-----	22.43
1154	Collier's Castor Pomace	5.68	1.99	1.16	\$25.00	23.83
1306	St. Louis Lead and Oil Co's Castor Pomace	5.60	1.90	.94	24.00	23.24
1081	Linseed Meal	5.73	2.50	1.60	28.00	24.99

## POTASH SALTS.

**1189.** Bisulphate of potash. Sold by Geo. B. Forrester, New York City. Sent by M. S. Baldwin, Naugatuck.

**1181.** Muriate of Potash. Sold by C. V. Mapes, New York. From stock purchased by C. H. Cables, Thomaston. Sampled by Station Agent.

**1174.** Muriate of Potash. From stock of H. J. Baker & Bro., New York. Sampled and sent by J. J. Webb, Hamden.

**1326.** Muriate of Potash. Stock of H. J. Baker & Bro. Sampled and sent by Dennis Fenn, Milford.

**1255.** Muriate of Potash. Stock of National Fertilizer Company, Bridgeport. Bought and sent by R. A. Moore, Kensington.

**1247.** Kainite. Stock of H. J. Baker & Bro. Bought and sent by J. M. Millbank, Greenfield Hill.

**1183.** Kainite. From Bowker Fertilizer Company, Boston, Mass. Stock of Usher & Tinker, Plainville. Purchased of them by T. N. Bishop, and sampled by Station Agent.

**1187.** Kainite. From H. J. Baker & Bro., New York. Stock of R. B. Bradley & Co., New Haven. Sampled by Station Agent.

**1252.** Kainite. From H. J. Baker & Bro., New York. Stock of R. B. Bradley & Co., New Haven. From one bag bought by the Station.

*Potash Salts Analyses.*

	1189	1181	1174	1326	1255	1247	1183	1187	1252
<i>Potash guarant'd</i>	38.10	----	----	52.90	50.1	----	12.00	----	----
Potash found	33.87	53.78	50.22	51.59	47.65	12.47	12.12	12.12	12.71
Equiv. Sulphate	62.60	----	----	----	----	23.06	22.40	22.40	23.50
Equiv. Muriate	----	85.18	79.54	81.60	75.47	----	----	----	----
Cost per Ton	*52.50	*37.50	36.50	40.00	37.00	*10.50	15.00	----	----
Potash costs per 100 lbs.	\$ 8.26	3.90	3.63	3.87	4.09	4.21	6.19	----	----

\* In New York.

**1189** is a sample of "bisulphate of potash," stated by the purchaser to have been guaranteed "70½ per cent. test," a guarantee ambiguous in the case of a bisulphate, but which may mean 70½ per cent. of either potassium sulphate or potassium bisulphate, equivalent to 38.1 or 24.4 per cent. of actual potash.

A letter from the seller makes it clear that the former figure was the one meant in the guarantee. New York analyses showed 36.65 per cent. of potash, equivalent to 67.76 per cent. of sulphate.

In Bulletin No. 78, p. 7, an analysis of the article is given showing only 33.87 per cent. of potash, or 62.6 per cent. of sulphate. This discrepancy is accounted for by the fact that the Station only determines and takes account of potash which is freely soluble in boiling water, for the reason that the farmer in buying it requires that it should be in a readily available, hence a soluble form. This article contains a considerable amount of potash not readily soluble.

The full analysis is given below :

Insoluble in Acid.....	1.87
Iron Oxide.....	3.86
Lime.....	.37
Magnesia.....	.22
Potash.....	35.33
Soda.....	5.94
Sulphuric Acid.....	41.24
Chlorine.....	8.76
Water and Undetermined.....	2.41
	<hr/>
	100.00

**1287** and **1252** are samples of goods in stock of R. B. Bradley & Co., of New Haven, stated to have been bought of H. J. Baker & Bro. They were in bags plainly labeled "Double Sulphate of Potash and Magnesia; 48-52 per cent., Sulph. Pot., 32-36 per cent. Sulph. Magnesia." **1252** was bought by the Station for double sulphate of potash and magnesia and applied to a plot of land in the belief that it was true to the label. Subsequent examination proved that both samples were kainite and not what they were labeled. In the bill rendered the goods were properly charged, however, as kainite.

Potash in kainite costs considerably more than in high grade muriate, and in most cases probably the magnesia and soda salts in the kainite are of no special advantage. It is used by manufacturers as a source of potash in mixed goods intended to carry but little potash, and serves at the same time as a "make-weight" to bring the goods down to the quality of "cheapness" called for by customers. It is cheaper for them to use kainite, even though actual potash costs more in it than in muriate, than to use muriate and to be obliged to put in plaster or other ballast.

## THE CONNECTICUT AGRICULTURAL

### COTTON HULL ASHES.

Six samples of "Potash Fertilizers," in one case "said to be ashes of Cotton Seed Hulls," and in another called "Sulphate of Potash," but evidently also cotton hull ashes, have been analyzed for parties in Suffield and Warehouse Point. All of them were bought of R. E. Pinney, Suffield. The results are as follows:

	1087	1147	1112	1268	1088	1125
Soluble phosphoric acid--	1.47	2.14	1.34	.73	.25	.94
Reverted " " --	4.18	4.72	5.59	5.88	4.40	4.69
Insoluble " " --	.52	2.77	3.13	3.34	.51	.45
Potash soluble in water,	32.52	27.73	23.80	19.13	21.87	17.81
Potash insoluble in water,		----	1.19	2.78		
Cost per ton, -----		\$39.00	39.00	39.00		39.00
Valuation, -----	\$58.08	55.34	50.07	42.79	40.59	36.54

This material, as the analyses show, is not uniform in composition. The phosphoric acid varies from 5.2 per cent. to 10.0, and the potash from 17.8 to 32.5 per cent. The samples which are dark in color, **1088**, **1125** and **1268**, are inferior to those which are light gray.

The water-soluble potash is valued at  $7\frac{1}{4}$  cents per lb. since chlorine is not present in any considerable quantity. The potash insoluble in water is disregarded in the valuation.

Phosphoric acid is valued at 10, 9 and  $4\frac{1}{2}$  cents, as in superphosphates. These articles furnish potash in a cheap and desirable form for tobacco, and we understand they were used chiefly on tobacco land.

The ashes are obtained from cotton seed oil factories. The seed before pressing is hulled, and the hulls are used partly or entirely for fuel in the furnaces. The ashes are liable to be mixed with coal ashes.

### WOOD ASHES.

**1166.** Wood ashes from house fires. Sent by D. H. Van-Hoosear, Wilton.

**1297.** Ashes from Merwin's brick kilns, Berlin. Sampled and sent by R. A. Moore, Kensington.



	ANALYSES.	1166	1297
Phosphoric acid,.....		1.98	.80
Potash soluble in water,.....		7.51	1.42
Matters insoluble in acid,.....			64.80
Cost per ton,.....			\$4.00

The poor quality of the brick kiln ashes is due chiefly to the fact that they contain so large a proportion of brick dust and sand; besides this to the fact that chestnut wood is largely used in the kilns which seems to be poorer in potash than the harder kinds.

If the brick kiln ashes could be kept from large admixture of sand and brick dust, they would be valuable to farmers in the vicinity. Poor as they are now (three-fifths sand and brick dust) they would no doubt be beneficial on many soils, but the *profitableness* of their use at \$4.00 a ton would largely depend upon the cost of transportation.

#### HEN MANURE.

**1167.** Sampled and sent by D. H. VanHoosear, Wilton. The material was very dry and did not contain as large an admixture of earth as is frequently the case.

	ANALYSIS.	
Phosphoric acid, .....		2.43
Potash, .....		1.59
Nitrogen as ammonia,.....		.36
Nitrogen of organic matter,.....		2.45
Cost per ton,.....		\$12.50

Reckoning nitrogen at 20 cents per lb., potash at  $4\frac{1}{4}$  cents, and phosphoric acid at 6 cents, the valuation of this article would be \$15.51.

#### ELEPHANT'S DUNG.

**1064.** This article was sent by Bradley Nichols & Sons, of Bridgeport. It is purchased by them from the winter quarters of Barnum's circus in large quantities. It is understood to be the solid portion of the excrement, quite free from litter and containing probably little of the urine of the animals. For comparison are given analyses of stable manure from the stables of New York Street Railroad Companies, consisting of horse dung, urine

and litter, cow manure containing no litter, and well rotted yard manure in its usual condition. The last three analyses were made by the writer in 1873, and published in the Report of the Board of Agriculture for that year.

	Elephant's Dung. 1064	Fresh Horse Manure.	Fresh Cow Manure.	Old Yard Manure.
Water .....	78.79	75.76	85.30	54.70
Organic and Volatile Matters Containing Nitrogen:	19.63	19.17	12.66	10.87
From Ammonia .....	.02	.26	.07	.03
From Organic Matters .....	.20	.27	.31	.43
Total Nitrogen .....	.22	.53	.38	.46
Ash containing:				
Potash .....	.30	.51	.36	.16
Soda .....	.08	.09	.04	.07
Lime .....	.10	.30	.29	.47
Magnesia .....	.06	.19	.19	.50
Oxide of Iron and Alumina .....	.03	.19	.09	2.00
Sulphuric Acid .....	.05	.09	.04	.01
Phosphoric Acid .....	.13	.41	.16	.72
Chlorine .....	.02	.07	.07	trace
Sand, Clay and Insoluble .....	.81	3.22	.80	30.50
	100.00	100.00	100.00	100.00

The elephant's dung represented by this sample is quite inferior to either of the samples of stable manure. This may be largely due to the fact that only the solid excrement was taken for analysis. The solid portions represent what passes through the animal undigested; the urine represents what has been assimilated from the food and has served its purpose in the animal economy. When animals are kept on a "maintenance ration;" most that is valuable in the food either as nourishment or as manure is assimilated and passes off, not through the intestines but the kidneys. It is just this valuable portion of the manure that so often is allowed to run to waste in the stable or barn yard.

The quality of manure (liquid and solid) is directly dependent on the quality of the food, being best when the food is most nutritious, and it is probable that the food of the elephants during the winter is less nutritious than that of milk cows or hard-worked horses.

#### DAMAGED GRAIN.

**1152.** A sample of grain damaged by fire and water taken from the ruins of a mill was sent to the Station by Joseph Sellers, of Gildersleeve. The analysis is as follows:

Water, .....	51.10
Phosphoric acid, .....	1.82
Nitrogen, .....	1.69

Such material would answer for the compost heap, but with half its weight consisting of water, could not profitably be transported far. Compare analysis with those of Stable Manure above.

#### PAPER MILL WASTE.

**1258.** A sample of this material sent by Henry Barrows, of North Manchester, contained

Water, .....	5.40
Organic and volatile matter, .....	45.16
Ash, .....	49.44
	<hr/>
	100.00

The organic matter contained 1.39 per cent. of nitrogen, and in the ash were .39 per cent. of phosphoric acid, and 41.84 per cent. of sand and earth. The material is probably the refuse removed from rags before pulping them for the paper manufacture.

#### MARINE MUD.

A sample of Marine Mud, **1082**, sent to the Station in December last, by W. T. Foote, of Guilford has the composition given below. For comparison are given three other analyses. One of New Haven harbor mud, (1860), another of mud from Saybrook, (1879), and a third of mud from Guilford, (1882).

	1082.		Guilford.	
	N. Haven Harbor.	Saybrook.	1882.	1883.
Water, .....	<i>Dry</i>	71.32	45.68	49.11
Organic and volatile matters, ..	10.56	2.79	4.54	3.20
Nitrogen, .....	(.52)	(.14)	.18	
Sand and insoluble, .....	77.63	20.82	40.97	33.90
Oxide of iron and alumina ....	7.36	2.62	6.14	3.75
Lime, .....	.73	.26	.90	3.62
Magnesia, .....	.73	.51	.05	.73
Potash, .....	.77	.17	.36	.34
Soda, .....	.80	.60	.56	.83
Sulphuric acid, .....	.96	.39	.79	.18
Phosphoric acid, .....	.03	trace	trace	.68
Chlorine, .....	.43	.51		.91
Carbonic acid, .....				2.93

The analysis of New Haven harbor mud was made on a dry sample and is not directly comparable with the others.

### SWAMP MUCK.

**1295.** Swamp Muck, taken two feet below the surface of the swamp, sun dried.

**1296.** Swamp Muck, taken from same swamp as **1295**, from surface and not over two inches below the top, sun dried.

These two samples were sent by Jas. N. Bishop, Plainville.

### ANALYSES.

The fresh material contains:

	1295	1296
Water, .....	58.75	38.11
Organic and volatile matter,* .....	37.13	31.00
Ash, .....	4.12	30.89
	<hr/>	<hr/>
	100.00	100.00
*With nitrogen, .....	.81	1.06

The ash contains:

Sand and soil, .....	1.67	22.06
Oxide of iron, and alumina, .....	.63	6.41
Lime, .....	1.06	.80
Magnesia, .....	.11	.42
Phosphoric acid, .....	.04	.32

The dry muck contains:

Organic and volatile matter, .....	89.85	49.6
Nitrogen, .....	1.96	1.7
Sand and soil, .....	4.03	35.3
Oxide of iron and alumina, .....	1.52	10.3
Lime, .....	2.56	1.3
Magnesia, .....	.27	0.7
Phosphoric acid, .....	.09	0.5

The chief difference in these mucks is that the surface muck contains a good deal of sand and earth while the lower layers are comparatively free from it.

## MARL.

**1059** is a sample of "Marl" sent to the Station by L. S. Wells, of New Britain. He writes, "It was taken from a sewer ditch near the High School in New Britain. The formation is as follows: Surface filling 12 inches, next peat or muck 18 inches, and below this 3 feet or more of "marl." Underneath this there is probably gravel. Has it value as a fertilizer?"

The analysis is as follows:

Water, .....	9.88
Insoluble in acid, .....	59.05
Oxide of iron and alumina, .....	4.95
Lime, .....	9.81
Magnesia, .....	1.07
Phosphoric acid, .....	trace
Carbonic acid, .....	7.45
Other matters by difference, .....	7.79
	<hr/> 100.00

In the organic matter of the marl was .22 per cent. nitrogen. The material has very little value as a fertilizer, except what lies in its 18 per cent. of carbonates of lime and magnesia. These ingredients would make it a useful application to most of our soils.

## LAND PLASTER.

**1153.** Cayuga Land Plaster. From stock of Cayuga Plaster Co., Union Springs, N. Y. Sampled by William A. Nettleton, Bridgeport, Ct. Cost \$3.00 per ton in car lots.

**1109.** Onondaga Land Plaster. Stock of Wm. H. Earle & Co., Worcester, Mass. Sampled and sent by J. P. Barstow & Co., Norwich.

**1153** contained 30.03 per cent. of sulphuric acid and 11.17 per cent. of insoluble matters.

**1109** contained 34.46 per cent. of sulphuric acid and 6.05 per cent. of insoluble matters.

The composition of the samples is as follows:

	<b>1153</b>	<b>1109</b>
Hydrated sulphate of lime (gypsum), .....	74.09	64.56
Matters insoluble in acids, .....	6.05	11.17
Other matters, chiefly carbonate of lime, .....	19.86	24.27
	<hr/> 100.00	<hr/> 100.00



## POLLARD'S SPECIAL FERTILIZERS.

Four samples of these special manures have been analyzed during the year.

They are not tabulated with the others on page 54, because any fertilizers bearing the name of Pollard have in this State a special savor of their own which forbids their being ranked with those of any other manufacturer.

The following with regard to him and them is reprinted from the last Station Bulletin:

The first work of this Station on its establishment in 1877 was to analyze two samples of Pollard's Fertilizers, sold by "H. M. Pollard, Agricultural Chemist," and made by "Pollard Bros." of New Haven, from harbor mud. The goods were a little more valuable agriculturally, and decidedly less valuable commercially than the barrels in which they were put up. The results of the analyses were published and Mr. Pollard went elsewhere.

In the Station Report for 1880, p. 26, is some further account of his operations and an analysis of "Pollard's Concentrated Privy Guano," brought to the Station by a person who gave his name and address as F. C. Cook, 119 Ellsworth ave., New Haven, but who probably was H. M. Pollard, and who said he had purchased ten tons of the material. A sample of it was made up of nitrates and phosphates of potash, soda and ammonia flavored with night soil. It could not be sold with any profit to the maker or compounder for much less than \$130 per ton, but was said to have been bought for \$65.00.

The right to manufacture this fertilizer was afterwards sold, or offered for sale, at several places in Pennsylvania for \$500 by the enterprising originator. The analysis made at this Station was shown and it was asserted that this Concentrated Privy Guano could be made for \$13.56 per ton.

Last August the Station analyzed four samples of "Pollard's Special Fertilizers," sent by the *New England Homestead*, being samples got by them of the Perry Oil Co., Pawtucket, R. I., with whom "Prof." H. M. Pollard, the "Agricultural Chemist," had an office at that time.

The analyses and valuations are as follows:

## POLLARD SPECIAL FERTILIZERS.

	Top Dressing.	For Corn.	For Potatoes.	For Cabbage.
Station No.	1278	1279	1280	1281
Nitrogen as ammonia, .....	3.11	2.71	2.16	3.03
Nitrogen of organic matter, .....	2.63			
Soluble phosphoric acid, .....	.96	.59	.35	.43
Reverted phosphoric acid, .....	3.03	4.09	4.02	3.85
Insoluble phosphoric acid, .....	2.31	6.07	6.57	5.41
Potash, .....	6.48	6.26	5.83	5.45
Cost, .....	\$50.00	50.00	50.00	50.00
Valuation, .....	\$39.15	31.24	23.31	30.60

The guarantees were:

Ammonia, .....	3½	3½	3	4
Phosphoric acid, .....	5	8½	7½	8½
Potash, .....	4	5½	8	5½

The cost of these goods was \$50.00, the average valuation \$32.32; difference \$17.68 per ton, or 54.7 per cent. of the valuation.

This is more than double the average difference between the cost and valuation of the superphosphates analyzed this year, or four times the average difference between the cost and valuation of the special manures.

According to the *N. E. Homestead*, Pollard has been operating lately in Rhode Island and Southeastern Massachusetts; "analyzing" soils and prescribing for them at the very modest price of 50 cents per acre. The reason for again referring to the man is to warn Connecticut farmers against him. His effrontery is boundless and it would not be at all surprising if he should before a great while begin his swindling operations in this State again—and practice for a time successfully. "Prof." H. M. Pollard, "Dr." Pollard, or "Prof. Geo. H. Stockbridge," "Agricultural Chemist," "State Chemist to Rhode Island and afterwards to Massachusetts," "not Prof. Stockbridge of the Massachusetts Agricultural College," but "another Stockbridge," sometimes "a brother," sometimes "a nephew," but always the same ubiquitous Pollard, is described as a man "62 years old, 5 feet 7½ inches in height, weighs about 180 pounds, has a light complexion, light eyes, sandy gray whiskers and gray hair."

The *New England Homestead* of Sept. 6, 1884, contains a full and entertaining account of the operations of this persistent and picturesque swindler.

## REVIEW OF THE FERTILIZER MARKET.

## ORGANIC NITROGEN.

*In Dried Blood, at wholesale*, nitrogen was quoted in the New York market during December, 1883, at about 14.4 cents per pound, which was the highest figure for the year. It fell in January of this year to 12.9 cents, rallied somewhat, and in May and June was quoted at 14 and 13.9 cents per pound. It again fell, selling in November at 12.4 cents.

*In Azotin,\* at wholesale*, nitrogen was quoted in the New York market at 17.0 cents in December, 1883. It fell to 13.2 cents in January 1884, rose to 13.9 cents in May and fell steadily to 12.6 in November.

*Dry Ground Fish Scrap, at wholesale*, was quoted in New York at \$25.50 per ton in December, 1883. It fell to \$23.90 in March, rose to \$24.75 in May, and since then has fallen quite steadily to \$23.00 in November.

The average composition of Fish Scrap, as determined in nine analyses, made during the year in Massachusetts, New Jersey and Connecticut is, nitrogen 8.37 per cent., phosphoric acid 7.61 per cent. Now, if we take 4.8 cents per pound as the wholesale cost of phosphoric acid in fish (6 cents, the retail price, less 20 per cent.), we may reckon *approximately* the wholesale cost of nitrogen in Fish Scrap as follows:

10.8 cents per pound in December, 1883, falling to 9.9 cents in March, rising to 10.4 in May, and since then falling steadily to 9.3 in November.

*The retail cost of organic nitrogen at New York and Philadelphia factories during the last season has been about as follows:†*

In dried blood, 4 samples,-----	18.3 cents per lb.
In ammonite and tankage, 4 samples. ....	15.8   "   "
In dry ground fish, ‡ 2 samples, .....	12.5   "   "
In castor pomace, ‡ 1 sample,-----	20.2   "   "

\* Azotin and Ammonite are trade names for animal matter (meat scrap, cracklings) very dry and free from grease.

† Bull. N. J. Ag'l Exp't Station, XXXIV., p. 5.

‡ Valuing phosphoric acid at 6 cents per pound.

*The retail cost in the Connecticut market during the season has been :*

In dry ground fish,† 4 samples,.....	18.3 cents per lb.
In castor pomace,† 2 samples,.....	19.7 " "

The average *wholesale* cost of nitrogen in dried blood, azotin, and fish scrap, for the last year, has been about 12.4 cents per pound in New York.

The average *retail* cost of nitrogen in the same goods at New York and Philadelphia, has probably been about 16.2 cents or 30 per cent. above the wholesale rates.

The average *wholesale* cost of nitrogen in blood and azotin alone has been 13.6 cents; average *retail* cost of same 17 cents, or 25 per cent. advance on wholesale rates.

#### NITROGEN OF AMMONIA SALTS.

*At wholesale* in New York, nitrogen was quoted at 16.4 cents per pound in December and January last, which were the highest figures for the year. It fell to 14.6 cents in April, rallied to 15.3 cents in May, and did not vary much from 14.8 cents till November, when it was quoted at 15.2.

*At retail* the average price of nitrogen in New York and Philadelphia appears to have been about 17.1 cents per pound during the season, varying from 19.2 cents to 15.5 cents.\*

In the Connecticut market it has sold for 15.8 cents per pound, being the cheapest form of available nitrogen for sale in this State during the season.

The average wholesale cost of nitrogen in sulphate of ammonia for the last twelve months has been about 15 cents per pound.

The average retail cost has been about 16.8 cents per pound or 12 per cent. advance on the wholesale price.

\* Bull. N. J. Ag'l Exp't Station, XXXIV, p. 5.

† Valuing phosphoric acid at 6 cents per pound.



## NITROGEN OF NITRATE OF SODA.

*At wholesale* in New York nitrogen was quoted in December, 1883, at 15.2 cents per pound. It fell in January to 14.8 cents, in February to 14.3 cents, and has not varied very much from that figure through the year.

*At retail*, in New York and Philadelphia markets during the season it has sold for from 18.9 cents to 15.5 cents; average 16.9 cents per pound.

*At retail* in this State, nitrogen of nitrate of soda has cost from 19.1 cents to 16.5 cents per pound; averaging 16.7 cents.

The average wholesale cost of nitrogen in nitrate of soda has been about 14.3 cents per pound during the year.

The average retail cost has been about 17.1 cents per pound, or 19.5 per cent. advance on the wholesale rates.

## PHOSPHATIC MATERIALS.

*Refuse Bone Black*, which in December, 1883, was quoted at \$22.50 per ton wholesale in New York, declined in February of this year to \$22.00. In May it was quoted at \$21.50, in June \$20.37, in July and August \$21.75, then fell to \$16.50 in October, where it remained in November.

*Ground Bone* remained steady at \$31.50 per ton till July, fell to \$30.50 in August, and since then has been quoted at \$29.00.

*Charleston Rock*, f. o. b. in New York, quoted in December of last year at \$8.50 per ton, remained steady till April. In May it was quoted at \$8.75, and has held that price ever since.

*Sulphuric Acid* 66° quoted at 1 $\frac{3}{8}$  cents per pound in December, 1883, fell to 1 $\frac{1}{4}$  in February, and since July has averaged a shade lower (1.22).

The above are wholesale quotations. If we assume that soluble, reverted and insoluble phosphoric acid have commercial values which stand in the ratio of 10, 9, and 2 $\frac{1}{4}$ , as is assumed in our valuations, then the New York *retail cost* of soluble phosphoric acid bought direct of manufacturers, as shown in analyses reported by the New Jersey Station, has been on the average:

In bone black superphosphates,.....	7.3 cents per lb.
In South Carolina rock superphosphates,.....	8.6    "    "



In Connecticut markets the retail cost of soluble phosphoric acid has averaged 9.2 cents per pound, the extremes being 7.5 cents and 10.5 cents.

#### ACTUAL POTASH.

##### *In Muriate of Potash.*

*At wholesale in New York* potash in muriate was quoted in December, 1883, at 3.22 cents per pound. It rose in May to 3.44 and since then has ruled quite steadily at 3.38 cents per pound. The average price for the year has been about 3.3 cents.

*At retail in New York and Philadelphia* it has cost on the average about 3.7 cents, and in Connecticut 3.87 cents per pound, or 17.3 per cent. advance on the average wholesale quotation for the year.

##### *In Kainite.*

*At wholesale in New York* kainite was quoted in December, 1883, at \$8.65 per ton. It fell steadily till April, when it cost \$7.13 per ton. It rallied to \$7.83 in July, and fell again in August to \$7.50, in September to \$7.00, and in November to \$6.38.

The average price for the year has been about \$7.57 per ton.

Kainite varies somewhat in composition. Assuming 12.2 per cent. of actual potash as its average content, the above quotations may be expressed in cost of actual potash, as follows:

*At wholesale in New York* actual potash in kainite cost 3.5 cents per pound in December, 1883. It fell steadily till April, when it cost 2.9 cents per pound. It rallied to 3.2 cents in July, and fell again in November to 2.5 cents per pound.

The average wholesale price for the year has been about 3.1 cents per pound.

*At retail in New York and Philadelphia* potash in kainite has cost about 4 cents per pound. In the two samples here analyzed it has cost 4.21 cents and 6.19 cents per pound.

To recapitulate, nitrogen has fallen during the year considerably. Phosphatic materials are lower, with the exception of South Carolina rock, which is a little higher than a year ago. Sulphuric acid is a shade lower and potash is a little higher.

The market quotations given above are taken from the "Oil, Paint and Drug Reporter," published in New York. The weekly

quotations for each month are averaged, and this average is taken as the quotation for the month.

There is a field here which might be profitably occupied by our agricultural papers, in securing *trustworthy* wholesale and retail quotations of fertilizers and fertilizing chemicals from the Boston, New York and Philadelphia markets and arranging them in a way which could be readily understood.

The following explanations will be helpful in the examination of the market quotations, and will also serve to show the basis on which they have been interpreted in this review:

*Phosphate rock, kainite, bone, fish scrap, tankage*, and some other articles are quoted and sold by the ton. The seller usually has an analysis of his stock, and purchasers often control this by an analysis at the time of purchase.

*Sulphate of ammonia, nitrate of soda and muriate of potash* are quoted and sold by the pound, and generally their wholesale and retail rates do not differ very widely.

*Blood, azotin and ammonite* are quoted at so much "per unit of ammonia." A "unit of ammonia" is one per cent., or 20 pounds per ton. To illustrate: if a lot of dried blood has 7.0 per cent. of nitrogen, equivalent to 8.5 per cent. of ammonia, it is said to contain  $8\frac{1}{2}$  units of ammonia, and if it is quoted at \$2.25 per unit, a ton of it will cost  $8\frac{1}{2} \times 2.25 = 19.13$ .

The term "ammonia" is *properly* used only in those cases where the nitrogen actually exists in the form of ammonia, but it is a usage of the trade to reckon all nitrogen, in whatever form it occurs, as ammonia.

To facilitate finding the actual cost of nitrogen per pound from the cost per unit of ammonia in the market reports, the following table is given:

Ammonia at \$4.00 per unit is equivalent to nitrogen at 24.3 cts. per lb.

"	3.90	"	"	"	23.7	"	"
"	3.80	"	"	"	23.0	"	"
"	3.70	"	"	"	22.4	"	"
"	3.60	"	"	"	21.8	"	"
"	3.50	"	"	"	21.2	"	"
"	3.40	"	"	"	20.6	"	"
"	3.30	"	"	"	20.0	"	"
"	3.20	"	"	"	19.4	"	"
"	3.10	"	"	"	18.8	"	"
"	3.00	"	"	"	18.2	"	"
"	2.90	"	"	"	17.6	"	"
"	2.80	"	"	"	17.0	"	"
"	2.70	"	"	"	16.4	"	"
"	2.60	"	"	"	15.8	"	"
"	2.50	"	"	"	15.2	"	"
"	2.40	"	"	"	14.6	"	"
"	2.30	"	"	"	14.0	"	"
"	2.20	"	"	"	13.4	"	"
"	2.10	"	"	"	12.8	"	"
"	2.00	"	"	"	12.2	"	"

Commercial sulphate of ammonia contains on the average 20.5 per cent. of nitrogen, though it is found to vary considerably in quality. When it has that amount of nitrogen (equivalent to 24.3 per cent. of ammonia),

At 5 cents per lb. Nitrogen costs 24.4 cents per lb.

"	$4\frac{7}{8}$	"	"	"	23.7	"
"	$4\frac{3}{4}$	"	"	"	23.1	"
"	$4\frac{5}{8}$	"	"	"	22.5	"
"	$4\frac{1}{2}$	"	"	"	21.9	"
"	$4\frac{3}{8}$	"	"	"	21.3	"
"	$4\frac{1}{4}$	"	"	"	20.7	"
"	$4\frac{1}{8}$	"	"	"	20.1	"
"	4	"	"	"	19.5	"
"	$3\frac{7}{8}$	"	"	"	18.9	"
"	$3\frac{3}{4}$	"	"	"	18.3	"
"	$3\frac{5}{8}$	"	"	"	17.6	"
"	$3\frac{1}{2}$	"	"	"	17.0	"
"	$3\frac{3}{8}$	"	"	"	16.4	"
"	$3\frac{1}{4}$	"	"	"	15.8	"
"	$3\frac{1}{8}$	"	"	"	15.2	"
"	3	"	"	"	14.6	"

Commercial nitrate of soda averages 95 per cent. of the pure salt or 15.6 per cent. of nitrogen.

If quoted at $3\frac{3}{8}$ cents per lb.			Nitrogen costs 23.2 cents per lb.		
"	$3\frac{1}{2}$	"	"	"	22.3
"	$3\frac{5}{8}$	"	"	"	21.5
"	$3\frac{1}{4}$	"	"	"	20.8
"	$3\frac{1}{8}$	"	"	"	19.9
"	3	"	"	"	19.2
"	$2\frac{7}{8}$	"	"	"	18.3
"	$2\frac{3}{4}$	"	"	"	17.6
"	$2\frac{5}{8}$	"	"	"	16.9
"	$2\frac{1}{2}$	"	"	"	16.0
"	$2\frac{3}{8}$	"	"	"	15.2
"	$2\frac{1}{4}$	"	"	"	14.4
"	$2\frac{1}{8}$	"	"	"	13.6
"	2	"	"	"	12.8

Commercial muriate of potash usually has 80 per cent. of the pure salt, or  $50\frac{1}{2}$  per cent. of actual potash.

If quoted at 2.00 cts. per lb.			Actual potash costs 3.96 cts. per lb.		
"	1.95	"	"	"	3.86
"	1.90	"	"	"	3.76
"	1.85	"	"	"	3.66
"	1.80	"	"	"	3.56
"	1.75	"	"	"	3.46
"	1.70	"	"	"	3.36
"	1.65	"	"	"	3.26
"	1.60	"	"	"	3.16
"	1.55	"	"	"	3.06
"	1.50	"	"	"	2.96

The following table shows the fluctuations in the wholesale prices of a number of fertilizing materials in the New York market, since May, 1881. The price given for each month is the average of the four weekly quotations in that month. Sulphate of ammonia is assumed to contain 20.5 per cent. and nitrate of soda 15.6 per cent. nitrogen, and muriate of potash  $50\frac{1}{2}$  per cent. of actual potash or 80 per cent. of the pure salt. For three months azotin and ammonite were not quoted at all.

COST OF NITROGEN AT WHOLESALE IN					COST OF POTASH AT WHOLESALE IN
	Blood. cts. per lb.	Azotin or Ammonite. cts. per lb.	Nitrate of Soda. cts. per lb.	Sulphate of Ammonia. cts. per lb.	Muriate of Potash. cts. per lb.
1881. May .....	21.3	21.8	21.9	24.7	3.78
June .....	21.5	21.8	21.1	24.8	3.86
July .....	22.0	21.8	20.8	25.6	3.92
August .....	22.4	22.1	20.8	25.2	4.06
September ..	23.8		20.9	24.7	3.78
October .....	23.0	24.3	20.8	24.9	3.64
November .....	23.3	24.3	20.4	25.6	3.62
December .....	23.1		20.3	25.7	3.60
1882. January .....	23.0		19.9	25.6	3.71
February .....	22.3	22.2	19.8	25.6	3.60
March .....	19.6	20.1	18.3	25.0	3.36
April .....	19.7	19.7	18.4	23.8	3.24
May .....	19.1	19.7	18.3	22.7	3.26
June .....	18.9	19.7	16.9	22.4	3.28
July .....	19.8	19.5	16.8	22.4	3.40
August .....	19.5	19.5	16.8	22.4	3.52
September ..	19.7	20.3	17.7	22.4	3.60
October .....	19.7	20.1	17.8	22.3	3.56
November .....	19.7	20.0	17.6	22.2	3.56
December .....	19.7	20.1	17.6	21.8	3.58
1883. January .....	19.7	20.1	17.9	20.7	3.51
February .....	19.4	19.7	17.9	21.9	3.42
March .....	18.0	18.9	17.8	20.7	3.42
April .....	18.2	18.9	17.9	20.1	3.40
May .....	18.2	18.9	16.3	20.1	3.34
June .....	17.8	18.9	16.3	20.0	3.36
July .....	17.2	18.9	15.6	19.0	3.23
August .....	16.0	18.9	15.3	18.6	3.18
September ..	15.3	17.0	14.8	17.6	3.21
October .....	15.0	15.2	14.8	17.3	3.12
November ..	14.5	15.2	15.2	16.4	3.20
December .....	14.4	17.0	15.2	16.4	3.22
1884. January .....	12.9	13.2	14.8	16.4	3.28
February .....	13.2	13.7	14.3	15.0	3.23
March .....	13.6	13.7	14.2	14.6	3.34
April .....	13.6	13.6	14.0	14.6	3.38
May .....	14.0	13.9	14.4	15.3	3.44
June .....	13.9	13.5	13.8	14.6	3.36
July .....	13.2	13.5	14.2	14.9	3.37
August .....	13.6	13.3	14.3	14.7	3.36
September ..	12.8	13.3	14.4	14.4	3.28
October .....	12.9	13.2	14.3	14.8	3.38
November .....	12.4	12.6	14.4	15.2	3.26



ANSWERS TO CORRESPONDENTS WITH REGARD TO FERTILIZERS,  
ETC.*Value of Gas Lime.*

Gas Lime is not constant in composition. Applied, fresh from the works, even in small quantity it is deadly to plants. It is made harmless by long weathering or composting, but if weathered would probably lose largely or entirely its special value as an insecticide. It is reported in agricultural papers that when dried and powdered it has been used with good effect on turnips and beets to keep off insect pests, being sprinkled on them like Paris green. Some insect pests are destroyed by proper use of any fine powder.

If you wish to try it as a fertilizer on a small plot, it should be applied very early in spring or late in the fall at the rate of say fifty bushels per acre. Slacked lime is a safer source of lime.

## CAUSES OF FAILURE IN USE OF FERTILIZERS.

A correspondent writes:

"Last fall in sowing my crop of spinach I used in addition to other manures, some of the — tobacco manure, sowing it in the drill and leaving occasionally a row without fertilizing. Up to the closing in of winter the crop had made a good growth but there was not the least perceptible difference in the fertilized and unfertilized plots, and now the question has arisen, where was the difficulty? I am sure that the land was not so rich, but that a judicious application of a good fertilizer must have had some effect everything else being favorable. . . . It would seem as if an application of 500 to 600 pounds per acre applied in close contact to the roots as it would be, being sowed in the drill, should make a perceptible difference, and perhaps an analysis of this sample will throw some light upon the subject."

The fertilizer referred to in this letter was analyzed, and though somewhat below the guaranteed composition, could not be called a very inferior fertilizer.

The reply was as follows:—

"The question why the fertilizer had no perceptible effect on the crop would be difficult to answer without knowing many conditions with regard to the soil and manner of application, which it

is very difficult to ascertain. If the soil for that crop needed either phosphoric acid, nitrogen or potash this fertilizer supplied them. If the fertilizer was applied too heavily or too near the roots it might have damaged the crop, particularly if the soil was dry. Sometimes this damage is evident to the eye, sometimes it is only enough to neutralize the good effect of the manure, so that apparently the manure produces no effect at all.

Sometimes, no doubt, what the soil needs is tillage; lightening or making it more compact, and in such cases no amount of manure will help much until there has been thorough tillage of the land."

It may be added here that the full effect of high manuring can only be got with the coöperation of the prolonged high temperature and strong light of summer weather. Cold and dark seasons largely neutralize the effect of all manures.

## THE SUPPLY OF LIME FOR THE TOBACCO CROP.

### *Gypsum or Stone Lime.*

In answer to a letter on this subject was written :

Gypsum is thought to be favorable to the "burning quality" of tobacco, *i. e.*, it tends to make the ash burn white. This is the result of observation, and it goes to show that the tobacco plant is able to supply itself with lime from plaster, although in so doing the lime must be separated from the sulphuric acid with which, in plaster, it is united.

If it seems desirable to substitute plaster for lime the relative quantity of the former to use is easily calculated from the statement that 56 pounds of good fresh-burned stone lime contain as much lime as 202 pounds of good unburned plaster.

I do not think, however, that it would be generally profitable to substitute plaster for lime, because, as you will see on referring to my examinations of tobacco, published in the Report of the Board of Agriculture for 1872,\* the average amount of sulphuric acid reckoned to be contained in the crop of an acre of tobacco was 17 pounds, and that of lime 88 pounds.

In the amount of plaster that will supply 17 pounds of sulphuric acid there are 11.9 pounds of lime, and in the quantity of plaster which can yield 88 pounds of lime there are 126 pounds of sulphuric acid.

\* See also this Report, page 96 *et seq.*

If the tobacco crop of an acre is obliged to supply itself with lime from plaster alone, this 126 pounds of sulphuric acid must be disposed of. The only way this can be done without liability of injuring the crop is by having some substance in the soil with which it can unite at once to form an inert compound. If other sulphates, such as potash, are present in the soil, or have been applied as fertilizers, their sulphuric acid will be separated in the same manner, in a degree proportional to their service in nourishing the crop, and if muriates or phosphates are on hand, their acids are likely to accumulate in the soil, because the tobacco plant takes up from all of them the alkali or base much more abundantly than the acid.

Now, *lime* applied as carbonate (or shortly becoming carbonate if supplied as slacked lime) is the cheapest, safest, and on all accounts best material to have in contact with the roots, to neutralize any acids which may become free in the soil when the plant withdraws from them the alkalies or bases they were associated with. The liberation of strong acids like sulphuric and muriatic acids in the soil, of course goes on slowly, and they are vastly diluted, and some small quantities of them may exist there without detriment.

It is, however, pretty certain that there is a liability to injury from this cause, and it is safer to avoid such liability. Again, lime as carbonate favors the conversion of the nitrogen of inert vegetable matter into nitrates, is a cheap accessory means of supplying this element, and therefore is a substitute in some degree for the costly nitrogenous fertilizers which are now so largely used. I should advise to supply to tobacco land no more than enough plaster to provide the crop with sulphur. 100 pounds of good Nova Scotia plaster, containing about 45 pounds sulphuric acid (anhydrous), 32 of lime and 22 of water, etc., will probably be enough.

If superphosphates or "specials" are used they will supply abundance or superabundance of plaster, since sulphate of lime is usually a necessary accompaniment of soluble phosphoric acid.

In such cases plaster in addition would be of no use whatever.

If sulphate of potash be used, I should apply no plaster but use with it the above amount of lime.

Especial pains should be taken to avoid all muriates or chlorine compounds.

## WHAT IS KIESERITE?

Kieserite is impure magnesium sulphate or Epsom salts, one of the products of the salt mines of Stassfurt, in Germany. The crude Kieserite often contains 30 per cent. or more of water, and may have considerable magnesium chloride—a compound injurious to plants if applied in any considerable quantity to them. “Cal-cined Kieserite” is that which has been partially freed from chlorine by heating strongly.

A recent analysis made at the Massachusetts Experiment Sta-tion showed 48.6 per cent. of magnesium sulphate (dry Epsom salts), 2.2 per cent. magnesium chloride, and the rest, 49.2 per cent., water and insoluble matter.

## COMPLETE ANALYSIS OF A FERTILIZER.

Mr. S. A. Smith, when sending Sample No. **1264**, writes :

“The analysis on the bag tells that there is :

Ammonia, .....	3 to 4½ per cent.
Available phosphoric acid, .....	10 to 12 “
Potash, .....	2 to 3 “
	<hr/>
	15 to 19½

Now, I should like to know what the other 80½ to 85 per cent. is composed of.”

The full analysis of the sample in question is :

Potash, .....	3.00
Soda, .....	5.90
Lime, .....	15.17
Magnesia, .....	.81
Phosphoric acid, .....	10.95
Sulphuric acid, .....	21.59
Chlorine, .....	3.86
Sand or clay, insoluble in acid, .....	.65
Moisture, .....	14.09
Organic and volatile matters, .....	23.98
	<hr/>
	100.00

With the organic (vegetable and animal substances destroyed by heat) and volatile matters are included 2.44 per cent. of nitro-gen ; 1.98 per cent. of this is present in the form of ammonia combined in the fertilizer with sulphuric acid.



The soda, chlorine and perhaps the magnesia, principally came from the kainite (?) used as a source of potash.

The lime, phosphoric acid and insoluble matters principally came from the phosphatic material employed. The sulphuric acid was introduced to "cut" the phosphate and make it readily soluble, which it does by combining with the lime and so setting phosphoric acid free, or causing it to form a soluble phosphate. A portion of the sulphuric acid, about 5.00 per cent. comes from the sulphate of ammonia, used to supply nitrogen or to "ammoniate" the goods.

The moisture comes in part from the water in the crude materials used, and in part from water unavoidably introduced in the process of manufacture.

#### ON SAMPLING FERTILIZERS FOR ANALYSIS.

The most difficult and critical part of the examination of a lot of any fertilizer or fertilizing chemical is the drawing and preparation of a sample for analysis.

Only in certain rare cases will it do to assume that one part of a heap or cargo of goods in bulk is like the rest, or that one package is like the others lying by it or that portions taken at the top or bottom of a single bag or barrel, have the same composition as the other portions. In a cargo or heap very great variations in the amount of moisture present are sure to be found in different parts of the lot, to say nothing of other sources of difference; and it is useless to hope for a sample that will be fairly representative unless the whole lot is overhauled, and from every car or barrow load removed, a small amount, say  $\frac{1}{100}$ , is taken, put in a place where it cannot lose or gain water, and finally, after thorough mixing, a portion of this large sample is separated, by a similar method substantially, for analysis.

In a lot of manufactured goods no two packages are absolutely alike. It is difficult in the manufacture of fertilizers to secure perfect mixing, especially when high grade articles are employed.

For instance, 3 per cent. of potash may be introduced by adding 120 pounds of high grade muriate of potash to 1880 pounds of other material. The bulk of this amount of a heavy salt is so small that the chances of perfect mixing are much less than if the same amount of actual potash were contained in, say 600 or 1,000 pounds of material. So that no two samples drawn from different bags can be expected to be precisely alike.



There is also likely to be a difference, depending on the amount of moisture present. One bag may have been filled from the surface of a large heap which has lain a few days in dry air and has dried out a good deal on the surface; the next bag may be from the center of the same heap, which is considerably damper.

The bags which have lain on the damp floor of a retailer's storehouse (in a number of cases Agents of the Station have found them lying on the ground which was noticeably moist) will not show as good results on analysis as those lying on the top tier, exposed to dry air.

Supposing that no valuable material has gone out of the bag and only moisture has gone in, a chemical analysis will yet show the goods inferior, for no account is taken of the extra weight in the packages caused by the water.

It is then advisable in drawing a sample to take from a number of bags or barrels instead of from one, and to select the bags with some care from different parts of the lot.

Further than this, it is evident there may be considerable differences in the composition of the several portions of even a single package. A barrel of bone, for instance, requires only a little shaking, such as it gets by transportation, to bring the coarser particles to the top and the finer underneath; so that a double handful taken from either end may misrepresent the quality of the goods.

In the case of articles of fine and uniform grain, superphosphates, etc., the chief danger is of another sort, namely: that the portions next the bagging, the *surface* of the goods, will be wetter or drier than the deeper interior layers, according as the atmosphere is wet or dry. Some kinds of goods, moreover, attract and bind water chemically, and in moist air these will be quite wet on the surface, while the interior is much dryer. They will at times absorb so much water as to dissolve partially and soak out of the bags.

These considerations go to show that the proper sampling of fertilizers is no very simple thing. It requires good judgment and a knowledge of the errors to be avoided.

The Station Agents are instructed when drawing samples to open at least three packages of each brand of goods in every case, and if the number of packages is large, to take a portion from every tenth one. The contents of bags or barrels are rapidly and accurately sampled by means of a sampler consisting of

two brass tubes about three feet long—one fitted within the other. The inner tube has a handle at one end. The outer tube at the other end carries a point of solid metal. A slit three-quarters of an inch wide runs nearly the entire length of both tubes. The package is laid on its side, so that the sampler can be pushed into it *diagonally* and *horizontally* from top to bottom. The inner tube is then turned so that the slits in the two tubes coincide, the fertilizer falls in and fills the inner tube, which is then closed and withdrawn.

By this means a section of the contents is obtained which fairly represents the whole package.

A single observation has been made of the variations likely to occur in the contents of different bags when sampled with care in the way described.

Ten bags were selected from a lot of Mapes' Special Manure for Heavy Soils, at the Hartford warehouse, and sampled as above. The samples were immediately bottled and analyzed. The material was fine and apparently well mixed.

The mechanical analyses of four samples will indicate their fineness and uniformity.

	1113	1115	1117	1119
Finer than $\frac{1}{80}$ inch,.....	55.9	56.3	50.4	57.1
Between $\frac{1}{80}$ and $\frac{1}{40}$ inch,.....	23.4	23.3	25.3	25.9
Between $\frac{1}{40}$ and $\frac{1}{20}$ inch,.....	18.8	17.6	21.7	16.1
Between $\frac{1}{20}$ and $\frac{1}{10}$ inch,.....	1.9	2.8	2.6	0.9
	100.0	100.0	100.0	100.0

Here follows the partial chemical analyses and average composition.

Station No.	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	Av.
Nitrogen in Ammonia, .....	3.41	3.51	3.62	3.40	3.51	3.42	3.64	3.47	3.38	3.55	3.49
Nitrogen in Nitrates, .....	.70	.68	.71	.68	.74	.67	.74	.73	.70	.72	.71
Phos. Acid,....	13.31	13.15	12.80	13.09	12.99	13.12	12.42	13.18	13.25	12.74	13.02
Potash, .....	3.62	3.58	4.19	3.50	3.87	3.48	4.02	3.96	3.46	4.04	3.66
Water,.....	11.40	11.60	11.00	11.40	11.00	11.80	11.00	11.50	11.90	11.20	11.38

The greatest difference in nitrogen (sum of nitrogen of ammonia and nitrates), between any two bags was .30 per cent.; in phosphoric acid, the greatest difference was .73 per cent.; in potash .73 per cent. The greatest difference in valuation occasioned by

difference in the chemical analyses of single bags would be about \$1.50 per ton, and in any combination of 3 bags, the differences would be very trifling. Such are the variations to be expected under the most favorable circumstances when the goods are very fine and well mixed and the sampling done with the greatest care.

#### ANALYSES OF THE ASH OF HEALTHY AND DISEASED PEACH WOOD.

P. M. Augur, Esq., the State Pomologist, recently sent to the Station for examination two samples of wood marked,

I. "From Mt. Rose peach tree supposed to be healthy."

II. "From diseased Mt. Rose peach tree."

The disease from which II was suffering was stated to be the "Yellows."

For analysis twigs of equal size were selected from the two lots. They were about  $\frac{5}{16}$  inch diameter at the butt end and  $\frac{3}{16}$  to  $\frac{4}{16}$  inch diameter at the tip and were of last year's growth.

The pure ash of I (carbonic acid, coal and water excluded) amounted to 1.87 per cent. The pure ash of II amounted to 1.61 per cent. The analyses of 100 parts of the ashes are as follows:—

	I.	II.
	<i>Healthy.</i>	<i>Diseased.</i>
Silica and matters insoluble in acid,-----	5.38	9.47
Oxide of iron,-----	1.09	2.09
Lime,-----	54.20	54.05
Magnesia,-----	9.49	7.49
Potash,-----	16.31	13.95
Soda,-----	1.18	1.19
Phosphoric acid,-----	4.34	4.68
Sulphuric acid,-----	6.90	6.53
Chlorine,-----	.46	.43
	<u>99.35</u>	<u>99.88</u>

In comparing the above analyses we note that the ash of diseased twigs contains:—

4.09 per cent. more silica, etc.,  
1.00 per cent. more oxide of iron,  
.34 per cent. more phosphoric acid,  
.15 per cent. less lime,  
2.00 per cent. less magnesia,  
2.36 per cent. less potash and  
.37 per cent. less sulphuric acid

than the ash of healthy twigs.

Dr. Goessmann, in his analyses of Crawford's Early Peach,\* reported in the ash of branches diseased by Yellows

0.93 per cent. more oxide of iron,  
 9.71 per cent. more lime,  
 2.70 per cent. more magnesia,  
 3.00 per cent. less phosphoric acid and  
 10.34 per cent. less potash

than in ash of healthy branches, taken from a once slightly affected tree which had been restored by treating (for three years?) "with a phosphatic fertilizer in the usual proportion, adding at the same time from three to four pounds of muriate of potash for every tree, the diseased branches," at the outset, having been "cut back to healthy wood." Dr. Goessmann infers that "the diseased objects (wood and fruit) contain less potash and more lime than the healthy ones."

Dr. Goessman leaves out of the account the items, Silica and matters insoluble in acid, Soda, Sulphuric acid and Chlorine, which in the above analyses amount to 13.92 per cent. of the ash of the healthy twigs and 17.62 per cent. of the ash of the diseased twigs. To omit those would somewhat increase the differences between the ash of the two, and would make lime in the ash of diseased twigs 3 per cent. more than in the healthy ones.

A more correct comparison is that of the absolute quantities of the several ash-ingredients contained in the same amount of the fresh twigs, as follows:—

In 10,000 parts of the peach twigs from Mr. Augur there are:

	<i>Healthy.</i>	<i>Diseased.</i>
Silica and insoluble, .....	10.07	15.25
Oxide of iron, .....	2.04	3.36
Lime, .....	101.44	86.99
Magnesia, .....	17.75	12.05
Potash, .....	30.55	22.45
Soda, .....	2.20	1.91
Phosphoric acid, .....	8.14	7.53
Sulphuric acid, .....	12.91	10.51
Chlorine, .....	0.87	.70
	<hr/> 185.97	<hr/> 160.75

\* Paper read before Mass. Hort. Society, March 18, 1882.



Here it becomes manifest that in the peach wood here examined 10,000 pounds of diseased twigs contain

5.2 pounds more silica,  
1.3 pounds more oxide of iron,  
14.5 pounds less lime,  
5.7 pounds less magnesia,  
8.1 pounds less potash,  
0.3 pounds less soda,  
0.6 pounds less phosphoric acid,  
2.4 pounds less sulphuric acid and  
.2 pounds less chlorine

than the healthy twigs. The diseased twigs in this case thus manifest, as compared with healthy ones, a *poverty of all the ash-ingredients*, the first two alone excepted.

The ingredients most largely deficient, and those therefore whose supply to the soil by way of fertilizing applications is most imperative, are lime, potash, magnesia and sulphuric acid.

To judge from the relative quantities of the deficient ingredients, the application of lime and magnesia in the case of Mr. Augur's peach orchard is as essential to the production of healthy wood and fruit as the addition of potash, and more necessary than the application of a phosphatic fertilizer.

The investigations of Drs. Gæssmann and Penhallow indicate that chlorine, though present in the wood in very small quantity, is yet important in the foliage as a means of assisting the transfer of nutritive matters from the leaves to the fruit and buds, and therefore must not be deficient in the soil, although evidently no large amount is needful.

#### FERTILIZING SWAMP-MUCK LAND.

A correspondent writes:—

"I have on my farm some twenty acres of swamp-muck land, the muck ranging from three to eight or ten feet deep. I have drained it, and part of it (some four or five acres) has been seeded down and mowed for three or four years, but the grass soon runs out. The piece where the muck is deepest I have now plowed and am about to seed it to grass again. I have a quantity of stable manure that I was thinking of putting on and harrowing in; but it has been suggested to me that perhaps I had better put on some other kind of fertilizer and use the stable manure on my upland.



"I want your advice, what to put on to bring good crops of grass—whether to use the stable manure there, or what to use instead of it. Any suggestions you may give me in regard to fertilizing that muck ground will be very thankfully received."

*Answer.*—Some varieties of swamp muck are nearly destitute of all kinds of plant-food except nitrogen, and contain this element in a very unavailable form. To make them fertile they require frequent applications of mineral fertilizers or else to be "amended" by dressing with large quantities of earth, marl, leached ashes, coal-ashes, or the like.

Stable manure is likely to be more profitable on the upland. Application of slacked lime at the rate of 10 to 25 bushels per acre and of some kind of phosphatic guano such as "Orchilla" or "Curaçao" guano 100 to 200 lbs., together with 100 lbs. of "sulphate of magnesia and potash," would supply the deficiencies that probably exist. Instead of Orchilla or Curaçao Guano, 200 to 300 lbs. of fine ground South Carolina Rock Phosphate might be used.

Lime should be applied some week or two before seeding. All the materials might be applied at the same time or they may be broadcast separately as convenient.

It is not easy to give entirely trustworthy advice in this case, but from knowledge of the character of muck in Connecticut, I should recommend the lime, etc., as likely to answer your purposes.

The cheapest lime to be had will serve, provided it slacks to a fine powder, or is a fine powder so as to admit of distributing evenly.

## ANALYSES OF TOBACCO LEAF.

In response to the inquiries of Mr. H. H. Austin, of Suffield, the following analyses of various samples of tobacco leaf were made with especial reference to the connection between their ash-composition and burning quality, and to the question what Soil and Fertilizers are adapted to produce good "Wrappers."

The SAMPLES were all supplied by Mr. Austin, who is responsible for such description of them as follows:

The samples 1 to 8 inclusive were the stripped leaves as used for cigar wrappers. Of these, five had undergone the sweating process, three were unsweated. The growths of Cuba, Sumatra, Wisconsin and Connecticut are represented.

Particulars follow :

The "quality" refers to all the characters that give value to wrappers, including color, texture and mode of burning.

No. 1. Havana leaf from Cuba (sweated). Good quality, burns white.

No. 2. Sumatra leaf (sweated). Burns well, poor quality otherwise.

No. 3. Wisconsin leaf, Havana seed (sweated). Quality fair, burns white and free.

No. 4. Connecticut seed leaf (sweated). Raised on new land with barn yard manure and no commercial fertilizer. Good quality, burns well.

No. 5. Connecticut leaf, Havana seed (unsweated). Manured with Cotton seed ashes, 1 ton Cotton seed meal, 300 lbs. lime, 300 lbs. plaster. Quality very good.

No. 6. Connecticut leaf, Havana seed (unsweated). Manured with 400 lbs. bone; 500 lbs. double sulphate potash and magnesia; 1 ton cotton seed meal; 300 lbs. lime and 300 lbs. plaster to the acre. Quality very good.

No. 7. Connecticut leaf, Havana seed (unsweated). Raised on stable manure, at least 10 cords to acre. Quality fair except that it crusts in burning.

No. 8. Connecticut leaf, Havana seed (sweated). Raised on good loamy land with slaughter-house manure worked over by pigs. Poor quality, crusts badly and will not burn well.

ANALYSES OF TOBACCO LEAF.—TABLE I.

	Weight of sample analyzed. Grams.	Per cent. of water in samples.	Dry weight of samples.	Weight of crude ash.	Per cent. of crude ash in dry leaf.
No. 1	65.7083	7.00	61.109	15.8213	25.89
2	57.0000	7.47	52.743	10.7160	20.32
3	75.0000	7.83	69.1275	19.1795	27.74
4	75.0000	9.25	68.0625	19.6310	28.84
5	75.0000	7.15	69.638	15.9275	22.88
6	75.0000	8.27	68.7975	16.2522	23.62
7	77.5175	7.13	71.991	15.5685	21.62
8	75.0020	7.80	69.152	18.4290	26.65

To prepare the crude ash the air-dry tobacco was burned at a heat scarcely rising to visible redness. The ash as thus obtained includes the sand and earth that adhered as dust to the leaf, and also small amounts of unburned carbon. A little moisture absorbed subsequently to the burning also figures in the analyses.

The potassium in the ash being partly combined with chlorine and partly with oxygen, it is necessary to deduct oxygen equivalent to chlorine when, as is most convenient for comparison, the potassium is all given as potash.

COMPOSITION OF CRUDE ASH OF TOBACCO LEAF.—TABLE II.

	Burn well.				Burn badly.			
	Sweated.				Unsweated.		Sweated.	
	1	2	3	4	5	6	7	8
Sand and soil insoluble								
in Acids and Silica	25.10	3.65	7.75	19.50	4.52	5.30	7.90	8.20
Oxide Iron & Alumina	1.63	.20	.35	1.25	.28	.22	.96	.81
Lime	21.80	23.92	24.30	19.61	23.57	22.25	25.23	19.32
Magnesia	5.08	6.84	5.44	12.10	8.71	8.57	6.48	7.25
Potash	15.13	28.18	25.72	18.22	26.02	26.50	23.20	28.29
Soda	.29	.30	.37	.59	.29	.15	.42	.11
Phosphoric Acid	1.92	3.65	3.46	2.05	2.14	2.18	2.24	1.79
Sulphuric Acid	3.05	3.93	4.53	4.08	5.99	6.62	3.98	4.31
Carbonic Acid	16.20	23.30	24.96	16.20	22.54	20.50	21.40	19.40
Chlorine	5.43	4.08	.89	4.72	4.12	5.58	6.30	7.62
Carbon	3.55	1.21	1.56	1.66	.98	2.05	1.94	2.35
Water	1.90	1.10	.80	1.14	.90	1.10	1.30	2.16
	101.08	100.36	100.13	101.12	100.06	101.02	101.35	101.63
Oxygen equivalent to								
Chlorine	1.22	.92	.20	1.06	.93	1.25	1.42	1.72
	99.86	99.44	99.93	100.06	99.03	99.77	99.93	99.91

The analyses of crude ash do not serve as a proper basis for comparison because of certain accidental or variable ingredients which they include. These analyses show to some extent the accuracy of the chemical work, and serve as the basis for calculating the composition of what is termed the pure ash.

Deducting from the crude ash in each case the accidental ingredients, viz: sand and soil, carbon and water, and also the carbonic acid which is likely to be retained to a variable degree, and reckoning the remaining ingredients to 100, we arrive at the following statement:

COMPOSITION OF PURE ASH.—TABLE III.

	Burn well.				Burn badly.			
	Sweated.		Unweated.		Sweated.		Unweated.	
	1	2	3	4	5	6	7	8
Oxide Iron & Alumina	3.04	.28	.54	2.01	.39	.31	1.42	1.17
Lime	40.66	33.76	37.34	31.81	33.18	31.62	37.16	28.38
Magnesia	9.47	9.66	8.36	19.80	12.26	12.18	9.54	10.67
Potash	28.21	39.76	39.48	29.42	36.62	37.69	34.17	41.54
Soda	.54	.42	1.11	.94	.40	.21	.61	.17
Phosphoric Acid	3.58	5.15	5.31	3.31	3.01	3.10	3.30	2.62
Sulphuric Acid	5.69	5.55	6.95	6.60	8.43	9.41	5.86	6.31
Chlorine	10.13	5.76	1.36	7.65	5.80	7.93	9.28	11.19
	101.32	100.34	100.45	101.54	100.09	102.45	101.34	102.05
Oxygen equivalent to								
Chlorine	2.28	1.30	0.31	1.72	1.31	1.79	2.09	2.52
	99.04	99.04	100.14	99.82	98.78	100.66	99.25	99.53
Pure Ash, per cent.	13.80	14.38	17.99	17.74	16.25	16.80	14.58	18.08

The notion appears to have established itself that fertilizers containing chlorine, whether in the form of common salt, muriate of potash or kainite are highly detrimental to the quality, and especially to the burning quality of tobacco. It is also believed that lime and especially potash in the form of sulphates and carbonates, are favorable to the quality and particularly to the burning quality of tobacco.

It is likewise thought that slaughter-house offal and fish scrap are injurious, while Peruvian guano, castor pomace and cotton seed meal are beneficial to the quality of leaf tobacco, and this different effect is attributed to the supposed greater quantity of salt or other chlorine compounds contained in the offal and fish.

The chemical examination of tobacco-ash ought to make manifest whether there is a connection between burning quality and relative quantities of chlorine, potash or other ash-ingredient. As regards chlorine the above analyses show that while the pure ash of the well-burning leaf, in general, contains less than the ill-burning, and while the largest content of chlorine is found in the worst burner, No. 8, and the smallest in a good burner, No. 3, yet the bad burner, No. 7, contains less than the good burner, No. 1. Of the two samples 5 and 6 designated as "very good," one contains 5.8, the other, 7.9 per cent. of chlorine.

With respect to potash and lime, we find the most potash and least lime in the bad burner, No. 8, while the reverse is true of



the good burner, No. 1. But the bad burner, No. 7, contains the next highest per cent. of lime with less potash than is present in the four good burners, Nos. 2, 3, 5, and 6.

The relative proportions of sulphuric acid and of the other ash-ingredients likewise stand in no obvious relation to the quality of the leaf.

The influence of the ash-ingredients on the burning quality of tobacco is however evidently not to be looked for merely in their mutual proportions, but also in their relations to the vegetable matter which burns in contact with them.

Tables I and III prove indeed that the proportion of total ash, whether "crude" or "pure," stands in no connection to quality.

To bring out the relations of individual ash-ingredients to quality, it is needful to reckon the quantities of them which exist in equal amounts of the dry leaf, as follows:—

PER CENT. OF ASH INGREDIENTS IN WATER-FREE TOBACCO LEAF.  
TABLE IV.

	Burn well.				Burn badly.			
	Sweated.		Unweated.		Sweated.		Unweated.	
	Cuba.	Sumatra.	Wis.	Conn.	Conn.	Conn.	Conn.	Conn.
	1	2	3	4	5	6	7	8
Sand, Soil and Silica.....	6.49	.74	2.15	5.62	1.03	1.25	1.71	2.19
Oxide of Iron and Alumina....	.42	.04	.10	.36	.06	.05	.21	.22
Lime (CaO).....	5.65	4.86	6.76	5.65	5.39	5.25	5.45	5.15
Magnesia (MgO) .....	1.32	1.39	1.51	3.48	1.99	2.02	1.40	1.94
Potash (K <sub>2</sub> O).....	3.92	5.73	7.16	5.25	5.95	6.26	5.02	7.54
Soda (Na <sub>2</sub> O).....	.08	.06	.10	.17	.06	.04	.09	.03
Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> ).....	.49	.74	0.95	.59	.49	.52	.48	.48
Sulphuric Acid (SO <sub>3</sub> ) .....	.79	.80	1.26	1.18	1.36	1.56	.86	1.15
Carbonic Acid (CO <sub>2</sub> ) .....	4.19	4.73	6.95	4.67	5.16	4.84	4.63	5.17
Chlorine .....	1.40	.83	.25	1.36	.94	1.32	1.36	2.03
Carbon .....	.92	.25	.43	.48	.23	.48	.42	.63
Water .....	.49	.22	.22	.33	.21	.25	.28	.58
	26.16	20.39	27.84	29.14	22.87	23.84	21.91	27.11
Oxygen equivalent to Chlorine..	.31	.18	.05	.30	.21	.29	.30	.45
Summing of Analysis .....	25.85	20.20	27.79	28.84	22.66	23.55	21.61	26.66
Total Crude Ash, per cent. ....	25.89	20.32	27.74	28.84	22.88	23.62	21.62	26.65
Potash Carb. in Ash sol. in water	1.37	5.23	7.60	2.91	4.54	4.29	3.46	4.74



From Table IV we gather that there is in fact for the same amount of dry tobacco nearly one-third more chlorine in No. 8 than in No. 1, but we see likewise that badly burning No. 7 contains no higher proportion of chlorine than is contained in the well burning Nos. 6 and 4, and scarcely more than in No. 1.

Table IV reveals no connection between burning quality and abundance or deficiency of potash, lime or any other ash-ingredient since among the good burners may be found both higher and lower percentages of each ash-ingredient than exist in No. 7 and 8.

According to Schloesing\* the ash of tobacco contains more potassium carbonate in proportion as it burns well while bad burning tobacco contains little or none. Nessler found this rule of Schloesing to have some exceptions. Dr. Moore in his valuable investigation of American tobaccos (report of 10th U. S. Census, Vol. III, p. 870) remarks that while with one exception out of 12 samples the seed-leaf varieties (wrappers) yielded more carbonate of potash than the others (plug, etc.) the amount of carbonate in the seed-leaf stood in no simple relation to the combustibility.

This result is in accord with Table IV, in which the last item is potash carbonate of ash soluble in water. The smallest as well as the largest quantities are seen to be found in the good burners Nos. 1 and 3, while the medium quantities are found alike in good and bad burners.

\* The French Government has for many years maintained a Laboratory for the investigation of all questions connected with the culture and manufacture of tobacco. Schloesing, the able director of the laboratory, in an article contributed in 1877 to Wurtz's *Dictionnaire de Chimie* writes in substance as follows: "Tobacco which, rolled into a cigar, holds fire for three minutes burns very well; if it holds fire for two minutes it burns well; for one minute it burns poorly; for half a minute it burns very poorly. The burning quality is absolutely independent of the variety of tobacco, of the thickness of the leaf, of the texture, of its strength, of its flavor, and of climate. It stands in relation only to the proportion of potash-salts of vegetable acids contained in the leaf and consequently to the richness in potash of the soil on which it grows."

"This theory of the combustibility of tobacco has been established by chemical analysis and by direct experiments in culture. The ashes of tobacco that burns well contain and yield to water, carbonate of potash, those of badly burning tobacco contain little or no carbonate but yield to water only sulphate or muriate of potash."

"The carbonate of potash is however a result of the burning of malate, citrate, tartrate and oxalate of potash and the burning quality is therefore related to the presence in the tobacco of these salts. If enough of the above named potash-salts

The very positive way in which Schloesing connects the burning qualities of tobacco with the amount of organic potash salts in the leaf or with the quantity of potash carbonate in the ash stands in sharp contrast with the foregoing results. The unequaled facilities which Schloesing has enjoyed for investigation during his long service to the French government, which monopolizes the sale of tobacco in all its forms in that country, and his recognized ability as an investigator may well make one hesitate to publish analyses which contradict his conclusions.

Nessler, Director of the Experiment Station at Carlsruhe, in his valuable little book on "Tobacco, its Composition and its Treatment," and Dr. G. E. Moore of New York in his "10th Census Report on the Chemistry of American Tobaccos," the only other chemists, to my knowledge, who have studied the composition of tobacco with reference to its burning qualities, find Schloesing's views confirmed in a general way but have noted some exceptional cases and conclude that burning quality is not so simply related to presence of potash salts as Schloesing assumes.

It is quite certain that to pronounce upon the burning quality of a sample of tobacco is not always an easy thing. Nessler has made comparisons by cutting from 6 different leaves (from the plants of each experimental plot of 40 sq. ft.) a piece  $1\frac{1}{2}$  in. broad from the midrib to margin, kindling these pieces at a lamp-flame as uniformly as possible and noting for each piece the time during which the combustion continued. The average of the 6 results was adopted. Nessler observes that the different leaves from the same stem burn unequally. The lowest leaves hold fire for the

is incorporated with a badly burning tobacco to give an ash containing a certain amount of potash carbonate, the tobacco is thereby made to burn well."

"On the other hand a well-burning tobacco is caused to burn badly by impregnating it with a certain proportion of sulphate or muriate of lime or sulphate or muriate of magnesia. The effect of these salts is to convert the malate, citrate, tartrate and oxalate of potash into the corresponding lime or magnesia salts. so that, on burning, the ashes contain their potash as sulphate or muriate and contain no potash carbonate but carbonates of lime and magnesia."

"In a cigar the fire is held by the charred tobacco. If this char be compact the fire easily goes out but if it be light and porous it continues to burn just as a compact lump of wood charcoal soon ceases burning when taken from the fire while an equal mass of pulverized charcoal burns away to ashes."

"Now the oxalate, malate, citrate and tartrate of potash when heated melt before they burn and by further heating yield an inflated, highly porous coal, favorable for holding fire. But the corresponding salts of lime and magnesia give a compact coal which is easily extinguished."

least time, the upper leaves hold fire better, and the intermediate ones the best. The same leaf burns differently in its different parts. The tips and edges frequently hold fire longer than the inner portions. Nessler found that in some cases tobacco which at first burned badly improved by keeping, and after three years burned well. This happened where nitrate of soda and cow-manure were applied, and the improvement by age was probably a result of fermentation. Dr. Moore found considerable discrepancies in his comparisons, and the writer has had no better fortune.

Some trials were made upon single leaves taken in a state so dry that they required most careful handling, each leaf being folded lengthwise closely upon itself, forming a flattened irregular stick of tobacco some  $\frac{1}{2}$  to  $\frac{3}{4}$  inch wide and  $\frac{1}{8}$  to  $\frac{1}{4}$  inch thick. The leaves were supported horizontally, set on fire by a lamp flame, and the time of burning and distance in inches traversed by the fire were noted. The results are as follows, in four successive trials on different parts of the leaves:

No.	I. Near Tips.		II.		III. Near Middle.		IV. Near Base.	
	Time.	Dist.	Time.	Dist.	Time.	Dist.	Time.	Dist.
8	2 min.	$1\frac{1}{4}$ in.	2 min.	$\frac{3}{8}$ in.	1 min.	$\frac{1}{8}$ in.	$\frac{1}{2}$ min.	$\frac{3}{16}$ in.
6	2 min.	$1\frac{1}{4}$ in.	2 min.	$\frac{3}{8}$ in.	$2\frac{1}{2}$ min.	$\frac{1}{4}$ in.	$1\frac{1}{2}$ min.	$\frac{1}{2}$ in.
1	2 min.	$\frac{3}{4}$ in.	4 min.	$\frac{1}{4}$ in.	$2\frac{1}{2}$ min.	$\frac{3}{16}$ in.	$2\frac{1}{2}$ min.	$\frac{1}{4}$ in.
3	4 min.	2 in.	6 min.	$1\frac{1}{4}$ in.	$5\frac{1}{2}$ min.	$1\frac{1}{2}$ in.	$2\frac{1}{2}$ min.	$\frac{5}{16}$ in.

In the above trials the conditions were indeed not favorable for strictly comparable results, since the different tobacco-leaves varied considerably as to extent and compactness of cross-section. They confirm, however, in a general way what Nessler asserts with regard to the unequal burning of different parts of the same leaf, and also agree with Mr. Austin's judgment in rating No. 8 as lowest in burning quality.

It is most probable that "burning quality" is the result of the coincidence of several conditions. The abundance of organic potash salts in the leaf, the abundance of cellulose (woody tissue), the abundance of sulphates are evidently favorable for easy burning. On the other hand, sugar, gum (pectic acid) and albuminous matters are difficult of combustion. Mineral salts which fuse at the burning temperature, such as chlorides of potassium and sodium and phosphates of potash and soda, hinder free burning. Fermentation, which reduces the quantity of sugar and albumi-



nous matters, and perhaps also that of organic acids, and which may influence the distribution of the soluble salts, acts, on the whole, to improve the burning quality.

It therefore would seem evident that burning quality is good or bad according to the preponderance of favorable or unfavorable factors, and is not always related in a simple manner to the composition of the ash.

It would be going too far to assert that the use of chlorides (muriates) of fish or slaughter-house fertilizers *must invariably* produce tobacco of inferior quality. Nessler found in his field trials that application of salt generally gave badly-burning tobacco. In 1862, however, tobacco from the plot manured with salt, though containing little carbonate of potash in the ash, burned scarcely less well than the tobacco from adjoining plots to which carbonate of potash, sulphate of potash and stable manure had been applied.

The tobacco-grower will, however, do well to avoid the use of the above-named fertilizers, which experience in all countries agrees in indicating to be as a rule likely to injure the burning quality of the leaf.

#### TOBACCO STALKS.

The stalks\* of tobacco after stripping off the leaves are recognized to have considerable fertilizing value, and are accordingly returned to the land.

Mr. Austin supplied a sample of stalks taken from the plants which gave the leaf-samples Nos. 5 and 6 already noticed. The average weight of the stalks was estimated by Mr. Austin at  $\frac{1}{2}$  lb. The number per acre was 8,000. The total produce per acre is therefore estimated at 4,000 lbs. As brought to the Station the stalks were thought to be in about the state of dryness usual at the time of stripping. They contained 45.7 per cent. of water. The dried tobacco gave, on burning, 11.04 per cent. of crude ash composed as follows:

\* These stalks are not to be confounded with the "Tobacco stems" of which an analysis is given in Station Report for 1878, p. 36. The "stems" are the midribs of the leaf rejected by the cigar manufacturers.

## TOBACCO STALKS, COMPOSITION OF CRUDE ASH.

Sand, Silica and matters insoluble in acids .....	3.17
Oxide of Iron and Alumina .....	.30
Lime .....	8.53
Magnesia .....	5.15
Potash .....	43.93
Soda .....	.35
Phosphoric Acid ( $P_2O_5$ ) .....	5.95
Sulphuric Acid ( $SO_3$ ) .....	6.14
Chlorine .....	9.09
Carbonic Acid .....	14.80
Carbon .....	3.16
	<hr/>
	100.57
Deduct Oxygen equivalent to Chlorine .....	1.04
	<hr/>
	99.53

## COMPOSITION OF TOBACCO STALKS.—TABLE V.

	Dry Stalks. Pounds per 100.	Moist Stalks. Pounds per 100.	Pounds per Acre.
Water .....	----	45.70	1828 0
Vegetable Matter* .....	90.88	49.39	1975.6
Lime .....	.94	.51	20.4
Magnesia .....	.57	.28	11.2
Potash .....	4.85	2.63	105.2†
Soda .....	.04	.02	.8
Phosphoric Acid .....	.66	.36	14.4
Sulphuric Acid .....	.68	.37	14.8
Chlorine .....	1.00	.54	21.6
Sand, Silica, Oxide Iron .....	.38	.20	8.0
Ash-ingredients .....	<hr/> 9.12	<hr/> 4.91	<hr/> 196.4
	100.00	100.00	4000.0

\* Containing total Nitrogen, 3.41 1.85 74.1

† 28.6 lbs. of potash exist as muriate, making 45.4 lbs. of the latter. The remaining 76.6 lbs. of potash exist mostly as carbonate and sulphate with a little nitrate. The dry stalks contained 0.2 per cent. of nitrogen in the form of nitrates, which corresponds to 30.4 lbs. nitrate of potash in 4000 of moist stalks.

The valuation of 4000 lbs. of stalks on the data above given is as follows:

Nitrogen of Nitrates,	4.34 lbs. at 18 cents,	= \$ .78
Nitrogen of Organic Matter,	69.76 lbs. at 20 cents,	= 13.95
Potash as Muriate,	28.60 lbs. at $4\frac{1}{2}$ cents,	= 1.26
Potash in other forms,	76.60 lbs. at $7\frac{1}{2}$ cents,	= 5.55
		<hr/>
		\$21.54



The above valuation is correct for 4000 lbs., but is perhaps too high for the acre-yield of stalks, because of the uncertainty of the estimate as to the amount of dry matter per acre, viz: 2172 lbs. (=4000—1828) which is probably too high.

The average weight of four water-free stalks examined by the Director in 1872 was  $3\frac{1}{2}$  oz. (96 grams). On this reckoning 8000 stalks would yield 1750 lbs. of dry substance instead of 2172 lbs. as above estimated. Dr. C. T. Jackson found in a crop raised at Hatfield, Mass. (in 1857?), 1490 lbs. of water-free stalks to 1750 of leaf. The valuation is very nearly one cent per lb. for the dry (water-free) stalks or \$21.54 for 2172 lbs., so that calling the acre-yield of dry matter but 1500 lbs., the stalks would be worth \$15 per acre at current rates.

## FEEDING STUFFS.

Twelve samples of feeding stuffs have been examined during the year. Their analyses follow.

### MAIZE KERNEL.

CLXXXII, Canada Snub Corn, a variety long cultivated in Northford. This sample was raised by T. F. Barnes, and sent together with No. CLXXXIII by F. A. Hill. This corn is said to give a larger yield than the following variety. The relative weights of kernel and cob were the same, 6 lbs. 2 oz. of kernel to 1 lb. 6 oz. of cob, or 100 of the former to  $22\frac{1}{2}$  of the latter.

CLXXXIII, Canada Yellow Corn, raised by F. A. Hall, Northford. This variety has been grown in that place for only two years.

#### ANALYSES.

	CLXXXII.	CLXXXIII.
Water .....	16.66	16.50
Ash .....	1.03	1.32
Albuminoids .....	8.94	9.87
Fiber .....	.78	.91
Nitrogen-free extract (starch, sugar, etc.)	68.55	66.58
Fat .....	4.04	4.82
	<hr/> 100.00	<hr/> 100.00

<i>Water Free.</i>		
Ash .....	1.23	1.58
Albuminoids .....	10.73	11.81
Fiber .....	.94	1.10
Nitrogen-free extract .....	82.26	79.75
Fat .....	4.84	5.76
	<hr/> 100.00	<hr/> 100.00

The above samples were sent for comparison as to their quality. The Canada Yellow contains one per cent. more of albuminoids and almost one per cent. more fat than the other variety, which however is claimed to be more prolific. So it may well be that the total crop of the Canada Snub Corn yielded more albuminoids and fat than the Canada Yellow. It would at any rate be unwise to generalize from a single analysis of each variety.

#### BEETS AND POTATOES.

CLXXX, White Star Potatoes from W. J. Jennings, Greens Farms.

CLXXXI, Sugar Beets, with regard to which Mr. Jennings says:—

“The beets are known as French Imperial Sugar Beets. Perhaps they do not yield quite equal to some of the mangel varieties, yet with strong ground 800 to 1,000 bushels per acre can be grown, equal to 20 to 25 tons. They appear to be equally hardy, and as easily cultivated as other beets.

They are better for feeding purposes than any other beets with which I am acquainted. Capital for sheep and cattle and good for swine.”

The analyses are as follows:—

	CLXXX.	CLXXXI.
Water .....	78.01	84.42
Ash .....	1.00	1.13
Albuminoids .....	2.19	1.69
Fiber .....	.33	.93
Nitrogen-free extract * .....	18.39	11.75
Fat .....	.08	.08
	<hr/> 100.00	<hr/> 100.00

\* Consisting in CLXXX chiefly of starch and in CLXXXI of cane sugar.

<i>Water Free.</i>		
Ash .....	4.55	7.25
Albuminoids .....	9.96	10.85
Fiber .....	1.50	5.97
Nitrogen-free extract .....	83.63	75.41
Fat .....	.36	.52
	<hr/> 100.00	<hr/> 100.00

### LINSEED MEAL.

A single sample of Linseed Meal, CLXXIV, has been analyzed. Its analysis as a fertilizer has been given on page 67.

It was sent by H. H. Austin, of Suffield, who bought it of Wilder & Puffer, Springfield, Mass. Cost \$28.00 per ton.

ANALYSIS.		<i>Water free.</i>
Water .....	9 90	-----
Ash .....	6.74	7.48
Albuminoids .....	35.81	39.74
Fiber .....	8.63	9.58
Nitrogen-free extract .....	36.65	40.68
Fat .....	2.27	2.52
	<hr/> 100.00	<hr/> 100.00

### MIDDINGS.

CLXXXIV is a sample of "Fancy Middlings" costing \$1.30 per one hundred pounds, sampled and sent by James W. Congdon, Hampton.

ANALYSIS.		<i>Water free.</i>
Water .....	10.93	-----
Ash .....	2.41	2.71
Albuminoids .....	15.21	17.08
Fiber .....	2.00	2.25
Nitrogen-free extract .....	65.84	73.91
Fat .....	3.61	4.05
	<hr/> 100.00	<hr/> 100.00

It was stated that pigs refused to eat this bran. Nothing abnormal could be discovered in the sample sent. The composition is that of ordinary wheat middlings, except that there is much less fiber than usual, in this "fancy" middlings. It has no disagreeable or musty smell or taste. If there is disagreement between the pigs and the middlings we apprehend that the fault lies with the former.

## WHEAT BRAN.

CLXXXV, a sample of wheat bran brought to the station by J. J. Webb, of Hamden, had the following composition:

		Water Free.
Water .....	11.90	----
Ash .....	6.33	7.18
Albuminoids .....	14.68	16.66
Fat .....	3.71	4.22
Nitrogen-free extract .....	63.88	71.92
Fiber .....		
	100.00	100.00

The sample was brought by Mr. Webb on account of its inferior appearance. It contained a good deal of black material, consisting of seeds and fragments of seeds that are foreign to bran.

The seeds were chiefly of two kinds, the corn cockle (*Lychnis Githago*, L.) and black bindweed (*Polygonum Convolvulus*, L.). The former is a pest in wheat fields because the seeds damage the color of the flour, and are said to impart a bitter taste to it, the latter is a common twining weed, not so troublesome as the cockle. The cockle seed we understand is separated from the wheat before milling. Its presence in wheat bran would therefore indicate that the refuse from this separation of cockle seed and light wheat, had been turned in with the bran, or that the bran had been prepared from an inferior quality of wheat. The chemical composition of the bran is however about the average.

## HAY AND STRAW.

The following three samples are from A. S. Hubbard, Glastonbury.

CLXXV, Coarse meadow hay or bedding.

CLXXVI, Good meadow hay.

CLXXVII, Rye straw.

	ANALYSES.		
	CLXXV.	CLXXVI.	CLXXVII.
Water .....	11.04	10.48	9.73
Ash .....	6.58	6.00	2.75
Albuminoids .....	7.56	7.31	2.19
Fiber .....	28.69	26.93	43.29
Nitrogen-free extract .....	44.46	46.60	41.04
Fat .....	1.67	2.68	1.00
	100.00	100.00	100.00

With regard to the coarse hay and straw, Mr. Hubbard writes, "They are rather poorer fodders than we have been accustomed to feed, but the early frost stopped the growth of the corn so that we have been compelled to use them." Analysis gives the same composition for the coarse hay and good hay, save in respect to fiber and nitrogen-free extract.

### MAIZE ENSILAGE.

CLXXVIII, Frost-affected Maize Ensilage.

CLXXIX, Drowth-affected Maize Ensilage.

Sampled and sent by A. S. Hubbard, Glastonbury.

#### ANALYSES.

	CLXXVIII. Frost-affected.	CLXXIX. Drowth-affected.
Water .....	85.42	83.04
Ash .....	2.94*	1.22
Albuminoids .....	1.75	.95
Fiber .....	4.17	6.09
Nitrogen-free extract .....	5.40	8.06
Fat .....	.32	.64
	<hr/> 100.00	<hr/> 100.00

\* 2.00 per cent. consisted of sand and clay.

#### Water Free.

Ash .....	20.18†	7.19
Albuminoids .....	12.00	5.60
Fiber .....	28.60	35.92
Nitrogen-free extract .....	37.03	47.52
Fat .....	2.19	3.77
	<hr/> 100.00	<hr/> 100.00

† 13.73 per cent. consisted of sand and clay.

Mr. Hubbard writes: "My stock eat the Ensilage much better than I had expected, in fact the frost seems to have done no further damage than to stop the growth of the corn before coming to maturity." The frosted ensilage has higher albuminoids (Protein) than the average of our analyses (see Table, p. 114), but its nitrogen-free extract (carbohydrates) is lower than any yet put on record. This is probably the result of freezing which ruptures the cell-tissue and makes their juices very accessible to ferment germs.



**"THE CONCENTRATED FEED."**

"The Concentrated Feed for horses, cattle, sheep, swine, poultry, etc., for sale by the Concentrated Feed Company, office No. 14 Pearl Place, Boston, Mass., U. S. A., O. P. Prall, Sup't."

A sample of "The Concentrated Feed" was sent to the Station in 1882, by Mr. Charles E. Lord, of Chester, with request to be informed of its value. To him was replied, "The station has a month's work to do before it can touch the Cattle Feed by way of making a regular analysis. Such an analysis is however hardly necessary."

The sample consists evidently of corn meal and perhaps fine bran or middlings, with some linseed cake, a good deal of salt and a little fenugreek to give it flavor. If you will refer to page 125 of the Station Report for 1878, you will find the analysis of a "Condimental Cattle Food," which is not unlike the sample you sent in composition and value. At \$110 per ton it is a folly to buy it."

Subsequently Mr. Lord sent to the Station a copy of the analysis published by the Concentrated Feed Company, and stated "the manufacturer claims that it contains four to five times as much nutriment as corn, oats, etc." Thereupon was written, "The analysis of Concentrated Feed is received. Corn meal and linseed meal are now both quoted at \$30 per ton or less. Bran or shorts at \$25 per ton, and salt at \$10 per ton. Accordingly the concentrated Food is worth for its raw materials, exclusive of fenugreek not more than \$30 per ton. The cost of the latter and mixing certainly can't exceed \$5 per ton. I should regard the stuff dear at \$35 per ton. The claim that the mixture contains 4 or 5 times as much nutriment as corn, oats, etc., is false. A mixture of 40 lbs. corn meal, 40 lbs. bran, 16 lbs. linseed cake, and 4 lbs. salt would make 100 lbs. very nearly as good as The Concentrated Food." Another sample was recently sent to the Station by D. H. Van Hoosear, of Wilton, who stated that the Concentrated Food is offered for sale in bags of 50 lbs. each by Allen Betts & Co., of Norwalk, at 6 cents per pound.

The sample was analyzed and the station analysis is subjoined, together with the analysis (by B. F. Davenport, M.D., Mass. Coll. of Pharmacy), published in the Company's circulars, and also the average composition of Wheat Bran.

ANALYSIS.			
	by Dr. Davenport.	by Station.	of Bran
Water.....	13.12	13.51	11.76
Fat.....	6.66	1.79	3.90
Carbohydrates.....	48.89	51.57	55.07
Albuminoids.....	13.52	13.31	14.88
Fiber.....	8.57	3.30	8.70
Mineral Salts.....	9.24	16.52*	5.69
	<hr/> 100.00	<hr/> 100.00	<hr/> 100.00

\* Contains 11.6 per cent. of common salt.

It is seen that the sample here analyzed differs somewhat from that analyzed (March, 1881) by Dr. Davenport, containing less fat by 4.85 per cent. and more mineral salts by 7.28 per cent. The sample here analyzed differs also from that sent in 1882, by Mr. Lord, in having none of the aromatic odor of fenugreek. It had in fact a musty smell and viewed under the magnifier contained numerous minute insect larvae. Therefore either the fenugreek has been left out of the sample from Norwalk, or by long keeping the flavor has passed from aromatic to musty.

The sample from Norwalk was found by microscopic examination, to consist largely of maize meal with some linseed meal. The linseed meal was of the sort known as "new process," from which the fat (oil) has been mostly extracted. It was not attempted to identify all the ingredients of the sample and other varieties of feeding stuffs may have been present. It will be observed also, that so far as nutriment is concerned wheat bran at  $1\frac{1}{4}$  cents per pound or less,† is not inferior to this "Concentrated Feed."

Notwithstanding the "satisfactory testimonials," as to the great value of "The Concentrated Feed," there can be no doubt that it is worth as feed when new and fresh no more than good wheat bran, because it is no more concentrated than bran. The difference between its cost and that of bran, viz:  $4\frac{3}{4}$  cents per lb., is what the consumer must pay for the "manufacture." The claims that it has extraordinary nutritive and medicinal power are in all probability wholly fanciful and unfounded. As to the use of fenugreek and other aromatics, such as caraway, fennel, anise, ginger, elecampane, etc., which have been employed in "Condimental Foods," there can be no doubt that they are occasionally serviceable to sick animals, but their true place is that of medicine and

† \$1.25 per hundred or \$23.50 per ton.

not of food. Sir John Bennet Lawes, of Rothamstead, England, made, years ago, a most thorough practical trial on the use of condiments in feeding and demonstrated that there is no profit in it. One of his trials was made on twenty sheep (ten fed with plain food, ten with the same plus condiment), and continued twenty-eight weeks, when the animals were slaughtered and marketed. The *extra cost of feeding ten sheep with condiment* was £3 14s. ; the result of the feeding being alike with condimented and with plain food.\*

Sir John Lawes stated† that sheep ate no more food under the stimulus of condiments than without. Pigs, he found, indeed, to consume a larger quantity of food, but they assimilated no more and got no benefit from the increased consumption.

Abundant other testimony to the same effect may be found in the Agricultural Journals of Great Britain where Condimental foods were extensively tested twenty to twenty-five years ago.

#### TABLE OF THE COMPOSITION OF AMERICAN FEEDING STUFFS.

By Dr. E. H. JENKINS.

On the following pages is given the average composition of the fodders commonly used in this country, compiled exclusively from American analyses. The compiler has aimed to bring together all analyses which have been published and could be obtained up to September 1st, 1884. Probably a few have been overlooked.

In the first column of the tables is given the total number of analyses from which the average was obtained. The probable accuracy of the average increases with the number of analyses on which it is based.

It is very desirable to know within what limits the composition of each fodder is likely to vary, and for that reason the maximum and minimum amounts of each ingredient have also been inserted in the table.

\* Experiments on the question whether the use of Condiments increases the Assimilation of Food by Fattening Animals, or adds to the Profits of the Feeder ; by J. B. Lawes, F.R.S., Edinburgh Veterinary Review, 1862.

† Journal of the Royal Society of England, xxiii, p. 425.

## COMPOSITION OF FEEDING STUFFS.

Name.	Analyses.	Total Dry Matter.			Protein.			Fat.			Nitrogen-free Extr.			Fiber.			Ash.
		Min.	Max.	Aver.	Min.	Max.	Aver.	Min.	Max.	Aver.	Min.	Max.	Aver.	Min.	Max.	Aver.	
GREEN FODDER.																	
Maize fodder-----	22	7.10	30.89	18.86	.56	1.78	1.30	.14	.81	0.32	3.20	17.69	10.65	1.90	9.78	5.37	1.22
Maize fodder—ensilaged-----	31	12.32	27.82	19.29	.88	2.77	1.47	.27	1.80	0.72	5.62	13.47	9.88	4.04	10.02	5.88	1.34
Pea vine—ensilaged-----	1	-----	-----	18.36	-----	-----	2.40	-----	-----	0.80	-----	-----	7.60	-----	-----	5.57	1.99
Cow pea vines, green and succulent, with pods-----	2	13.97	17.90	15.94	3.00	3.25	3.12	0.58	0.62	0.60	5.34	8.46	6.91	2.87	4.09	3.48	1.83
Cow pea vines, probably after pods were removed-----	1	-----	-----	27.19	-----	-----	1.85	-----	-----	0.21	-----	-----	7.86	-----	-----	15.27	2.00
Soja bean, whole plants-----	2	30.15	30.65	30.40	3.88	3.94	3.91	1.05	1.55	1.30	14.24	14.39	14.32	8.26	8.91	8.58	2.29
Rye-----	5	-----	-----	25.34	2.30	3.00	2.60	0.60	0.70	0.65	4.90	6.70	5.90	13.40	14.90	14.30	1.90
Beet leaves-----	1	-----	-----	11.16	-----	-----	2.74	-----	-----	0.60	-----	-----	2.49	-----	-----	2.50	2.83
Carrot leaves-----	1	-----	-----	16.70	-----	-----	4.26	-----	-----	0.86	-----	-----	5.99	-----	-----	2.25	3.34
Sorghum leaves-----	3	23.30	32.70	27.00	2.40	3.70	3.10	-----	-----	-----	-----	-----	15.14	4.30	6.80	5.20	3.50
HAY AND DRY COARSE FODDER.																	
Clover hay-----	12	78.18	91.53	84.98	8.87	13.06	11.38	1.47	3.10	1.98	35.03	45.47	40.11	23.79	28.64	26.35	5.15
Hay containing much clover-----	6	85.70	88.63	86.19	6.38	14.42	10.18	1.50	3.09	2.38	42.07	45.19	43.33	19.66	29.53	25.04	5.26
Timothy hay-----	18	85.70	91.30	87.42	4.88	9.69	6.36	1.08	3.30	2.03	41.09	48.58	44.89	22.70	34.25	29.93	4.23
Timothy and Red Top-----	5	85.70	86.88	85.94	6.02	8.97	7.45	1.45	2.48	1.97	39.20	46.88	44.45	24.72	28.45	26.82	5.25
Low meadow hay-----	10	85.50	93.60	89.50	4.60	10.40	7.70	0.70	3.60	2.20	39.80	55.20	43.60	21.40	40.00	30.20	5.80
Salt marsh hay-----	11	81.40	92.80	89.53	4.30	7.80	5.90	1.63	3.10	2.32	34.10	53.67	42.42	27.00	37.90	31.47	7.42
Black grass hay-----	2	88.98	91.06	90.02	6.56	7.06	6.81	2.28	2.38	2.33	43.14	49.31	46.26	24.63	29.42	27.01	7.60
Black grass hay (with seed)-----	1	-----	-----	90.84	-----	-----	7.50	-----	-----	2.96	-----	-----	51.44	-----	-----	22.10	6.84
Hungarian grass hay-----	8	-----	-----	83.30	5.56	10.67	6.59	1.30	2.14	1.81	34.85	44.71	42.49	26.18	28.94	27.16	5.24
Maize fodder—field-cured-----	6	60.63	77.07	67.95	3.39	4.97	4.29	0.66	1.56	1.24	30.52	40.82	35.96	18.65	25.18	22.14	4.32

† Calculated to average water content.

† Includes fat.



## COMPOSITION OF FEEDING STUFFS.—Continued.

Name.	Analyses.	Total Dry Matter.			Protein.			Fat.			Nitrogen-free Extr.			Fiber.			Ash.
		Min.	Max.	Aver.	Min.	Max.	Aver.	Min.	Max.	Aver.	Min.	Max.	Aver.	Min.	Max.	Aver.	
HAY AND DRY COARSE FODDER—cont.																	
Buckwheat straw	2	89.50	89.60	89.55	3.33	4.38	3.85	1.42	1.70	1.56	32.08	34.49	33.28	44.93	46.83	45.88	5.05
Oat straw	3	87.50	93.47	89.89	2.30	5.08	3.35	1.00	3.15	2.07	26.42	44.26	36.97	35.21	55.96	42.78	4.72
Rye straw	1	---	---	87.5†	---	---	6.89	---	---	2.68	---	---	35.70	---	---	34.20	8.03
Wheat straw	2	88.63	92.22	90.43	2.19	2.56	2.37	1.24	2.53	1.89	41.51	47.01	44.27	37.32	40.05	38.68	3.22
Cow pea vines	6	86.01	90.70	88.95	13.56	19.81	15.68	1.13	4.05	2.87	34.98	46.40	42.17	17.20	23.66	1.82	8.41
ROOTS, BULBS AND TUBERS.																	
Beets (red)	2	10.54	12.32	11.43	1.48	1.73	1.60	1.14	.21	.18	7.16	7.64	7.40	.64	1.69	1.16	1.08
Carrots	2	12.15	13.20	12.68	.97	1.99	1.38	.62	.71	.67	6.86	7.70	7.28	1.55	2.32	1.93	1.34
Mangolds	3	7.18	8.56	7.96	1.57	1.89	1.70	.03	.51	.20	3.56	4.91	4.19	.76	.91	.82	1.05
Onions	3	6.48	14.74	11.56	.77	2.28	1.38	.22	.36	.27	3.77	11.28	8.61	.63	.76	.70	0.59
Potatoes	2	20.31	22.39	21.35	1.14	1.32	1.23	.12	.14	.13	17.75	19.69	18.72	.28	.48	.38	0.89
Sweet potatoes	3	26.61	34.04	29.72	.45	1.28	0.97	.28	.36	.31	23.00	29.72	26.13	.60	2.50	1.36	0.93
Ruta bagas	1	---	---	12.92	---	---	1.15	---	---	.09	---	---	9.11	---	---	1.16	1.41
Turnips	1	---	---	11.11	---	---	1.34	---	---	.09	---	---	8.11	---	---	.86	0.71
Yam	1	---	---	23.77	---	---	2.06	---	---	.25	---	---	25.24	---	---	.70	.67
FRUITS, GRAIN AND OTHER SEEDS.																	
Apples	1	---	---	15.39	---	---	.21	---	---	.28	---	---	14.26	---	---	.91	0.23
Cucumbers	1	---	---	4.30	---	---	.83	---	---	.21	---	---	1.95	---	---	.85	.46
Peas	1	---	---	21.94	---	---	4.37	---	---	.55	---	---	14.48	---	---	1.66	.88
Squash	2	4.82	5.42	5.12	.64	.68	.66	.24	.32	.28	2.95	3.54	3.24	.53	.54	.40	.40
Tomato	1	---	---	8.74	---	---	1.00	---	---	.47	---	---	5.84	---	---	.70	.73
Barley	9	87.40	92.80	88.90	8.60	15.70	12.40	1.50	3.20	1.80	66.70	73.00	69.30	1.30	4.20	2.90	2.50
Buckwheat	8	85.10	89.10	87.40	8.60	11.00	10.00	2.20	2.40	2.25	62.60	65.40	64.50	7.80	9.40	8.70	2.00

† Calculated to average water content.



## COMPOSITION OF FEEDING STUFFS.—Continued.

Name.	Analyses.	Total Dry Matter.			Protein.			Fat.			Nitrogen-free Extr.			Fiber.			Ash.
		Min.		Aver.	Min.		Aver.	Min.		Aver.	Min.		Aver.	Min.		Aver.	
		Max.	Aver.	Max.	Aver.	Max.	Aver.	Max.	Aver.	Max.	Aver.	Max.	Aver.	Max.	Aver.		
FRUITS, GRAIN AND OTHER SEEDS—cont.																	
Cotton seed, hulls and kernel	1	---	---	92.28	---	---	15.72	---	---	18.56	---	---	29.09	---	---	25.75	3.16
Cow pea	5	79.20	89.99	85.21	19.30	23.00	20.77	1.30	1.60	1.43	48.10	61.99	55.75	3.37	5.00	4.06	3.20
Doura (brown)	3	87.30	92.46	89.00	9.00	11.50	10.30	---	---	4.20	---	---	69.90	---	---	1.50	1.60
Soja bean	3	89.87	93.95	91.41	34.63	38.62	36.22	16.80	19.00	17.92	26.20	30.50	28.66	3.69	5.00	4.24	4.37
Maize kernel (dent)	7	85.95	93.78	89.93	7.53	12.07	10.36	3.80	6.93	5.15	66.26	75.73	70.60	1.25	4.81	2.29	1.53
Maize kernel (flint)	6	81.84	93.41	88.93	7.00	13.65	10.67	3.40	7.13	5.00	64.95	74.62	70.08	.78	2.88	1.71	1.47
Maize kernel (sweet)	24	89.14	94.02	91.42	9.45	15.31	11.71	5.25	11.89	8.21	61.78	72.35	66.54	1.46	5.24	2.82	1.93
Maize kernel ("Western corn")	3	79.30	83.60	80.90	7.80	8.60	8.30	3.60	3.90	3.70	64.90	68.20	66.00	1.70	1.80	1.75	1.20
Maize kernel (average of all varieties)	176	79.30	94.02	89.51	7.00	15.31	10.62	3.40	7.13	5.49	61.78	75.73	69.72	.78	5.24	2.13	1.55
Oats	21	86.50	91.10	89.30	8.00	14.40	11.30	4.10	5.80	5.00	57.10	66.90	61.00	1.50	12.90	9.00	3.00
Rice	10	86.00	88.60	87.60	5.90	8.60	7.40	0.30	0.60	.40	77.50	89.60	79.20	.10	.40	.20	.40
Rye	6	86.80	91.30	88.40	9.50	12.10	10.60	1.40	2.10	1.70	70.70	73.90	72.60	1.40	2.10	1.60	1.90
Sorghum seed	9	83.24	90.72	87.48	7.67	11.25	8.88	2.12	4.60	3.65	66.81	73.59	71.27	1.48	3.21	1.88	1.80
Wheat (winter)	229	83.77	92.90	89.63	8.25	16.63	11.82	1.26	3.93	2.14	68.08	76.64	72.04	.44	2.87	1.77	1.86
Wheat (spring)	13	86.65	91.88	89.63	8.14	15.40	12.51	1.82	2.56	2.20	66.07	78.66	71.19	1.33	2.30	1.82	1.91
Wheat (unclassified)	54	87.62	90.64	89.28	9.80	14.70	11.97	1.64	2.83	2.09	68.52	74.65	71.49	1.21	3.05	1.91	1.82
Wheat (average of all analyses)	296	83.77	92.90	89.56	8.14	16.63	11.87	1.26	3.93	2.13	66.07	78.66	71.90	.44	3.05	1.79	1.85
FLOUR AND MEAL.																	
Barley meal	3	83.80	86.00	84.90	8.80	13.90	11.80	0.70	2.20	1.70	---	---	70.90	---	---	.10	0.50
Buckwheat flour	3	85.06	87.22	86.48	4.18	8.00	6.48	0.65	1.74	1.33	75.81	79.37	77.34	.21	.35	.28	1.05
Graham flour	3	86.30	87.90	86.90	11.30	12.40	11.70	1.50	1.90	1.70	69.80	70.00	69.80	1.80	2.00	1.90	1.80
Hominy	2	86.38	86.64	86.51	8.08	8.41	8.25	.42	.46	.44	77.07	77.18	77.12	.31	.33	.32	.38

## COMPOSITION OF FEEDING STUFFS.—Continued.

Name.	Analyses.		Total Dry Matter.		Protein.			Fat.			Nitrogen-free Extr.			Fiber.		Ash.	
	Min.	Max.	Aver.	Min.	Max.	Aver.	Min.	Max.	Aver.	Min.	Max.	Aver.	Min.	Aver.			
FLOUR AND MEAL—continued.																	
Maize meal	20	75.46	90.14	85.14	7.38	13.94	9.26	2.36	4.63	3.82	60.72	72.70	68.58	.93	2.99	2.29	1.54
Oat meal	6	91.16	93.77	92.15	12.87	16.25	14.66	6.05	8.77	7.06	66.62	68.99	67.57	.64	1.15	.86	2.00
Rye flour	4	86.42	87.65	86.90	6.00	7.05	6.65	.78	.89	84	77.56	79.09	78.28	.35	.45	.41	.72
Wheat flour,* from winter wheat	1	---	---	87.04	---	---	8.56	---	---	1.19	---	---	76.59	---	---	.17	.53
Wheat flour, from spring wheat†	6	86.50	89.70	87.68	8.56	14.12	10.68	.56	2.01	1.11	68.32	78.11	75.00	.00	1.22	.22	.64
Wheat flour (unclassified)	17	86.83	88.81	87.54	9.69	13.31	11.28	.81	1.88	1.15	69.52	76.93	74.43	.06	.99	.16	.52
Wheat flour (average of all varieties)	24	86.50	89.70	87.56	8.56	14.12	11.01	.56	2.01	1.14	68.32	78.11	74.67	.00	1.22	.18	.56
BY PRODUCTS AND REFUSE.																	
Apple pomace	3	22.80	27.40	25.90	1.00	1.70	1.40	1.70	2.00	1.90	15.70	17.00	16.70	3.90	5.90	5.20	.70
Brewers' grains, from brewery	7	21.71	31.36	25.46	4.69	7.75	6.01	1.47	2.94	1.85	10.11	15.73	12.63	3.10	5.58	3.96	1.01
Brewers' grains, kiln dried	1	---	---	97.40	---	---	20.40	---	---	6.40	---	---	54.90	---	---	11.80	4.00
Brewers' still	1	---	---	5.70	---	---	1.90	---	---	.80	---	---	2.00	---	---	.70	.30
Cotton seed meal	22	90.87	94.32	92.17	22.27	50.81	42.45	10.24	18.01	13.36	12.74	38.68	23.49	2.77	11.76	5.67	7.20
Linseed cake	2	89.66	91.65	90.62	34.14	34.93	34.53	5.22	6.06	5.64	33.44	37.43	35.42	7.97	9.36	8.66	6.37
Linseed meal	4	87.53	93.83	91.28	27.68	33.95	31.23	5.16	11.57	8.72	31.45	44.89	37.75	7.12	7.57	7.34	6.24
Linseed meal (new process)	6	86.65	93.21	89.49	27.10	37.10	33.45	1.30	4.01	2.83	35.22	48.03	38.78	7.58	9.00	8.37	6.06
Palm nut meal	3	89.16	93.86	91.71	13.53	16.01	14.39	6.41	18.73	13.30	33.85	41.66	38.88	18.75	23.98	21.40	3.74
Sorghum meal, from seed mostly decorticated	1	---	---	86.84	---	---	8.25	---	---	3.85	---	---	71.27	---	---	1.88	1.59
Sorghum bagasse	3	11.30	16.60	14.50	0.62	0.68	0.65	---	---	---	---	---	10.20	2.80	3.30	3.10	0.60
"Hominy chops," "hominy feed," "Baltimore meal," "white meal"	8	86.47	91.07	88.18	7.88	10.20	9.45	4.45	10.20	7.78	60.95	71.10	65.12	2.54	4.79	3.47	2.36

\* The average of 18 analyses, most of them incomplete, is: Total dry matter, 89.63; Ash, .64; Protein, 10.92.

† The average of 16 analyses, some of them incomplete, is: Total dry matter, 88.55; Ash, .60; Protein, 11.63.

COMPOSITION OF FEEDING STUFFS.—*Continued.*

Name.	Analyses.	Total Dry Matter.			Protein.			Fat.			Nitrogen-free Extr.			Fiber.			Ash.
		Min.	Max.	Aver.	Min.	Max.	Aver.	Min.	Max.	Aver.	Min.	Max.	Aver.	Min.	Max.	Aver.	
BY PRODUCTS AND REFUSE— <i>continued.</i>																	
Gluten meal		21.57	92.60	92.13	28.03	35.00	31.51	8.01	8.73	8.37	44.72	54.46	49.60	.73	3.25	1.99	.66
Maize cob		13.85	58.92	82.90	67.12	3.73	2.50	.08	.92	.47	45.31	66.38	55.99	28.23	38.26	30.36	1.33
"Starch feed," refuse from starch manufacture		27.80	37.70	32.90	3.60	5.70	4.60	1.30	2.00	1.60	18.80	28.90	23.80	1.60	3.40	2.50	0.20
"Sugar feed," refuse from glucose manufacture (dry)		2.89	60.93	40.91	50.13	13.10	13.30	5.90	11.20	8.60	54.90	61.40	53.10	8.40	10.70	9.50	2.00
"Glucose waste," (wet)		1.---	---	24.00	---	---	3.72	---	---	1.63	---	---	17.39	---	---	.75	0.51
Malt sprouts		3.88	03.92	69.89	73.21	00.25	91.22	95.10	2.98	1.79	45.47	50.30	48.60	9.30	11.99	10.72	5.67
Rye bran		3.86	30.89	70.87	70.12	60.16	80.15	26.17	2.60	2.19	59.75	67.00	63.12	2.50	4.10	3.51	3.62
Wheat middlings		9.86	15.89	44.88	03.10	13.15	00.12	27.20	4.35	3.23	60.21	70.86	65.48	3.47	7.45	4.58	2.47
Wheat bran		2.85	82.91	35.87	98.78	16.89	14.54	2.39	5.84	3.66	50.41	58.93	55.16	7.24	16.64	8.79	5.83
Wheat shorts		6.86	41.89	04.88	15.11	13.13	13.14	2.50	4.85	3.79	55.62	62.32	58.96	6.34	10.47	7.94	4.32
Rice flour		1.---	---	89.68	---	---	14.00	---	---	13.49	---	---	51.22	---	---	6.12	4.85
Rice meal		1.---	---	84.90	---	---	9.30	---	---	1.60	---	---	59.90	---	---	8.10	6.00
"Rice polish"		1.---	---	88.79	---	---	12.93	---	---	7.69	---	---	62.96	---	---	2.41	2.80
Rice feed		1.---	---	89.67	---	---	11.43	---	---	11.49	---	---	47.20	---	---	9.93	9.62
Rice bran		1.---	---	90.70	---	---	12.78	---	---	5.23	---	---	62.34	---	---	2.00	8.35
Rice bran, "douse"		1.---	---	91.22	---	---	10.93	---	---	8.20	---	---	41.93	---	---	17.76	12.40
Rice hulls		2.91	50.92	30.91	90.31	4.68	3.90	0.55	0.65	.60	38.74	41.60	40.17	30.27	38.57	34.42	12.81
Rice straw		1.---	---	96.34	---	---	4.68	---	---	1.74	---	---	50.90	---	---	28.31	10.71

## SEEDS.

During the year a considerable number of seeds have been tested both for seedsmen and for those who have bought of them.

The samples whose examinations are reported (see next page), were bought by an agent of the station, and in most cases from the contents of boxes of garden seeds which bore the names of the firms mentioned. The purchases were made in Bridgeport, Hartford and Middletown rather than in smaller and more remote places where there is more suspicion that the seed may not be in all cases fresh.

Fifteen out of the forty-eight samples examined, or about 31 per cent., are of quite inferior quality, and three of them were absolutely worthless.



Variety.	Put up by	Station No.	Seed sprouted, per cent.	$\frac{1}{2}$ the sprouted seed germina- ted in days.
<b>ONION—</b>				
White Portugal.	John Reck, Bridgeport.	283	.3	--
Large Wethersfield.	" "	285	1.0	--
Southport White Globe.	Hegemann & Sturgis, Bridgeport.	294	79.0	4
Yellow Danvers.	Comstock, Ferre & Co.	297	86.3	5
Wethersfield Large Red.	" "	298	57.0	5
Early Red Globe.	" "	299	61.1	5
Danvers Yellow.	A. H. Dunlap & Sons.	300	48.0	5
True Danvers Yellow.	D. M. Ferry & Co.	301	73.3	5
Early Red.	" "	302	81.8	6
Large Red.	" "	303	26.8	6
Early Danvers Round Yellow.	Rice, Cambridge, N. Y.	304	71.0	6
White Portugal or Silver Skin.	" " "	305	70.0	6
<b>RADISH—</b>				
Early Red Turnip.	John Reck, Bridgeport.	284	86.8	3
French.	Hegemann & Sturgis, Bridgeport.	295	79.5	4
Early Scarlet Turnip.	Comstock, Ferre & Co.	317	77.0	3
Early Long Scarlet.	A. H. Dunlap & Sons.	318	36.8	10
Scarlet Turnip.	" "	319	47.8	5
Early Scarlet Turnip.	D. M. Ferry & Co.	320	54.6	5
New Breakfast French.	" "	321	68.5	5
Early Scarlet Turnip.	Hiram Sibley.	322	37.3	5
<b>TOMATO—</b>				
Livingston's Perfection.	John Reck, Bridgeport.	288	78.0	7
Trophy.	Comstock, Ferre & Co.	312	57.3	7
New Early Perfection.	A. H. Dunlap & Sons.	313	96.0	7
Early Acme.	" "	314	77.0	7
Early Round Smooth Red.	Johnson & Robbins.	315	66.8	7
Trophy.	Ferry & Co.	316	87.3	5
<b>LETTUCE—</b>				
Early Curled Simpson.	Hegemann & Sturgis, Bridgeport.	289	88.0	3
Hanson.	A. H. Dunlap & Co.	306	97.0	4
Early Curled Silesia.	" "	307	82.5	4
Ferry's Early Prize Head.	D. M. Ferry & Co.	308	86.8	4
Early Curled Silesia.	Hiram Sibley.	309	27.1	4
Early Curled Silesia.	Rice, Cambridge, N. Y.	310	93.0	4
Hanson.	" "	311	87.8	4
<b>CABBAGE—</b>				
Flat Dutch.	Hegemann & Sturgis, Bridgeport.	290	92.8	3
Early Jersey Wakefield.	A. H. Dunlap & Sons.	330	33.2	4
Mammoth Late Flat Dutch.	" "	331	8.0	--
Premium Flat Dutch.	Rice, Cambridge, N. Y.	332	32.0	4
True Early Winningstedt.	" " "	333	65.8	4
True Early Winningstedt.	D. M. Ferry & Co.	334	89.3	3
Early Drumhead.	" "		94.5	3
<b>TURNIP—</b>				
Early White Egg.	A. H. Dunlap & Sons.	325	90.0	3
Early White Flat Dutch.	Rice, Cambridge, N. Y.	326	96.5	3
Ruta Baga.	" " "	327	84.8	5
New White Egg.	" " "	328	95.0	3
Golden Ball.	Johnson, Robbins & Co.	329	90.0	3
<b>PEA—</b>				
Henderson's First of All.	Hegemann & Sturgis, Bridgeport.	291	99.0	3
<b>CARROT—</b>				
Square Orange.	Hegemann & Sturgis, Bridgeport.	292	51.8	4
<b>CUCUMBER—</b>				
Early White.	Hegemann & Sturgis, Bridgeport.	296	95.8	2



## REPORT OF THE BUILDING COMMITTEE.

---

The Act entitled "*An Act concerning The Connecticut Agricultural Experiment Station*" (Public Acts of 1882, p. 213, Chapter CXXXIII), was approved April 26, 1882, and appropriated twenty-five thousand dollars to the Station "for the purpose of buying a suitable lot and erecting thereon buildings, and equipping the same for the permanent use of said Station."

A special meeting of the Board of Control was held May 9th, 1882, at which the Executive Committee described the several parcels of land they had examined, and laid before the Board correspondence relative to property brought to their notice in other parts of the State, with such other information as they had pertaining to the matter.

The Board, after visiting several lots and parcels of land in and about New Haven, and after discussing the merits and prices of each, directed the Treasurer to purchase the lot on Suburban street, if it could be done on certain terms. A building committee was chosen, consisting of the Hon. H. B. Bigelow, Messrs. T. S. Gold, J. J. Webb, S. W. Johnson and Wm. H. Brewer to carry out the intentions of the Act.

This Committee organized the same day, choosing Governor Bigelow, Chairman, Mr. Webb, Vice-Chairman, and Mr. Brewer, Secretary. A second meeting was held May 12th at which certain preliminaries were transacted, and May 13th the property was bought for twelve thousand (12,000) dollars, and immediate possession given.

The property consists of about five acres of land on Suburban street, in the immediate suburbs of New Haven and just within the city limits, about one and five-eighths miles from the City Hall and near the Whitneyville Horse Railroad. There was a large dwelling house, a barn, and a well on the property.

A new laboratory was planned and a substantial brick building built for this use during the same year. The station office was opened in its new quarters in September of that year, but the laboratory was not in condition for much chemical work until the next February. This building was formally accepted from the builders Jan. 13th, 1883, and up to the date of the annual meeting of the Board of Control, three days later, the amount expended was \$20,809.04.

During the next fiscal year, the fitting up of this laboratory was finished, sundry repairs made, and \$3,029.96 was expended.

While this work had been going on, a new law concerning commercial fertilizers had been passed which modified the work required of the Station, so the Committee after consultation with the Board of Control decided to defer using the remainder of the special appropriation until the next year, by which time experience with the working of the new law and the running of the Station in its new quarters would indicate how the small balance could be used to the best advantage to the State. The balance was put into the savings bank for the winter.

Early in 1884 various plans were considered, and after several meetings and careful consideration of the matter by the Committee and the full Board, the Committee decided to erect a wooden addition to the north end of the house. The contract was made May 12th, 1884, and the addition handed over by the contractor and occupied by the Station in July. On this the balance of \$1,207.46 was used.

With the expiration of Governor Bigelow's term of office as Governor, Mr. Webb became Chairman until July 1st, 1884, when his term of office as member of the Board of Control expired. Mr. Gold was then chosen Chairman. No new members were added as these dropped out by limitations of office.

The total receipts and expenditures by this Committee are as follows :

Special appropriation .....	\$25,000.00	
Savings bank interest on deposit .....	46.46	
		<hr/> \$25,046.46
The property as bought .....	12,000.00	
Unexpired insurance .....	26.99	
Lumber on place .....	11.06	
Water connection .....	500.00	
Gas connection .....	155.75	
Builder's contracts, .....	6,662.46	
Architect .....	277.75	
Steam heating apparatus .....	800.64	
Sundry carpenter's bills .....	2,288.35	
Masons' bills for repairs .....	545.21	
Plumbing, gas fitting and drainage ..	1,530.02	
Painting and glazing .....	248.23	
		<hr/> \$25,046.46

All the accounts pertaining to this special appropriation have been examined, audited and balanced by the State Auditors, and closed.

The buildings are now in good repair and condition.

Signed,	T. S. GOLD,
	S. W. JOHNSON,
	WM. H. BREWER.

## ERRATA.

Page 41, Station No. **1235**, under Phosphoric Acid Available, for 9.82 read 10.18

" 42,	"	<b>1216,</b>	"	"	"	"	8.24	"	7.25
" 44,	"	<b>1313,</b>	"	"	"	"	9.00	"	10.94
" 56,	"	<b>1318,</b>	"	"	"	"	6.66	"	6.94
" 42.	"	<b>1186,</b>	"	Phosphoric Acid total,	for	13.66	"	13.26	
" 55,	"	<b>1160,</b>	for Bowker's read Stockbridge's.						
" 55.	"	<b>1155,</b>	"	"	"	"	"	"	

# INDEX.

	Page
Act concerning commercial fertilizers .....	12
Adams & Thomas, Meat and Bone .....	60, 62
Agricultural value of a fertilizer .....	28
Ammonia, explanations concerning .....	23
"    Sulphate of, analyses .....	66
"    Salts, cost of Nitrogen in, during 1884 .....	79
Analysis of a Superphosphate, complete .....	89
Anderson, W. H., Ground Bone .....	59, 61
Announcement .....	3
Ashes, Cotton Hull, analyses of .....	70
"    Wood, analyses of .....	70, 71
Atwood Brothers, Ground Bone .....	60, 62
Azotin, cost of Nitrogen in, during 1884 .....	78
Baker Fertilizer Co., Dissolved Bone .....	39, 43
Baker, H. J. & Bro., Pure Dissolved Bone .....	32, 33
"    "    "A. A." Superphosphate .....	37, 38, 41, 42
"    "    Castor Pomace .....	67
"    "    Complete Grass Manure .....	52, 55, 57
"    "    "    Potato Manure .....	52, 55, 57
"    "    Kainite .....	68
"    "    Muriate of Potash .....	68
"    "    Nitrate of Soda .....	65
"    "    Pelican Bone Fertilizer .....	38, 42
"    "    Special Tobacco Manure .....	52, 54, 56
"    "    "    Oat Manure .....	52, 54, 56
"    "    "    Corn Manure .....	52, 55, 57
Baldwin, M. S., Home-made Phosphate .....	49
Beets, analysis of .....	107
Bennett, P. W., Ground Bone .....	60, 62
Blood, Dried, cost of Nitrogen in, during 1884 .....	78
Bone Manures .....	58
Bosworth Bros., Ground Bone .....	59, 61
"    Potato Phosphate .....	54, 56
"    Superphosphate .....	37, 41, 45
Bowker Fertilizer Co., Acid Phosphate .....	32, 33
"    "    Dissolved Bone .....	39, 43
"    "    Dry Ground Fish .....	64
"    "    Fish and Potash .....	39, 43, 45
"    "    Hill and Drill Phosphate .....	39, 43, 45
"    "    Kainite .....	68



	Page
Bradley Fertilizer Co., B. D. Sea-Fowl Guano .....	40, 44
“ “ Dissolved Bone Black .....	32, 33
“ “ Original Coe's Superphosphate .....	39, 43
“ “ Patent Superphosphate .....	39, 43
“ “ Superphosphate .....	38, 42, 45
Brown, R. B., Oil Co., Castor Pomace .....	67
Bran, Wheat, analysis of .....	109
Buffalo Fertilizer Co. and Chemical Works, Bone Superphosphate .....	39, 43
“ “ “ “ Buffalo Superphosphate, No. 2 .....	40, 44
“ “ “ “ Potato, Hop and Tobacco Phosphate .....	39, 43
Bulletins .....	10
Castor Pomace, analyses .....	67
Chapman, Seth's Son & Co., Guaranteed Peruvian Guano .....	37, 41
“ “ Peruvian Guano, Lobos .....	37, 41
“ “ Standard Peruvian Guano .....	39, 43
Chittenden's Fish and Potash .....	39, 43
“ Grain Fertilizer .....	52, 55, 57
“ Root Fertilizer .....	52, 55, 57
Clark's Cove Guano Co., Bay State Fertilizer .....	39, 43
Coe, E. Frank, Bone Superphosphate .....	37, 41, 45
“ Ground Bone .....	60, 62
Coe, Russell, Bone Superphosphate .....	40, 44, 45
“ Davidges' Fish and Potash .....	40, 43
“ “ Special Favorite .....	40, 43
Collier White Lead and Oil Co., Castor Pomace .....	67
Common Sense Fertilizer Co., Common Sense Fertilizer, No. 2 .....	38, 42
Concentrated Feed, analyses of .....	111
Cooke, Blood Guano .....	40, 44, 45
“ Dissolved Ground Bone .....	40, 44
Cooper, Peter's Glue Factory, Ground Bone .....	59, 61
Cotton Hull Ashes, analyses of .....	70
Curtis, J. G., Reliable Phosphate .....	40, 44
Darling, L. B. & Co., Animal Fertilizer .....	37, 38, 41, 42, 45
“ “ Ground Bone .....	60, 62
Davidge, Fish and Potash .....	40, 43
“ Special Favorite .....	40, 43
Dickenson, David, Bone Phosphate .....	38, 42, 45
Elephants' Dung, analysis of .....	71
Ensilage, Maize, analyses of .....	110
Explanations concerning analysis and valuation of fertilizers .....	23
Failure in use of fertilizers, causes of .....	86
Feeding Stuffs, analyses of .....	106
“ Table of the Composition of American .....	113
Fertilizers, classification of those analyzed .....	28
“ explanations concerning analysis and valuation .....	23
“ form for description of .....	21
“ instructions for sampling .....	19

	Page
Fertilizer Law, explanations in regard to .....	11
"    observance of .....	15
"    text of .....	12
Fertilizer Market, review of .....	78
Fertilizers, number analyzed .....	17
"    sampling of .....	90
Fish, Dry Ground, analyses .....	64
"    cost of Nitrogen in, during 1884 .....	78
Fish and Potash .....	36
Fodders, analyses of .....	106
Forrester, Geo. B., Bi-Sulphate of Potash .....	68
"    Cabbage Fertilizer .....	52
"    Corn Manure .....	52, 54, 56
"    Dissolved Bone Black .....	32, 33
"    Grass Fertilizer .....	52
"    Ground Bone .....	59, 61
"    Nitrate of Soda .....	65
"    Oat Manure .....	52
"    Onion Manure .....	52, 54, 56
"    Potato Manure .....	52, 54, 56
Gas Lime, value of .....	86
Glidden & Curtis, Soluble Pacific Guano .....	40, 44, 45, 46
Grain, damaged, analysis of .....	72, 73
Guanos .....	34
Guano, Peruvian, analyses .....	35
"    Phosphatic, analysis of .....	30
Harris, G. H. & Son, Superphosphate .....	37, 41, 46
"    "    Ground Bone .....	60, 62
Hathaway, F. B., Home-made Phosphate .....	48
Hay, analyses of .....	109
Hen Manure, analysis of .....	71
Hobson, Hurtado & Co., Standard Peruvian Guano .....	39, 43
Home-made Phosphate .....	47
Judson & Sparrow, Bone and Potash Phosphate .....	40, 44
Kainite, cost of Potash in, during 1884 .....	81
Kieserite .....	89
Linseed Meal, analysis of as fertilizer .....	67
"    "    "    a fodder .....	108
Lister Bros., Ammoniated Dissolved Bone .....	37, 41
"    Celebrated Ground Bone .....	60, 62
"    Potato Manure .....	52, 55, 57
"    Standard Phosphate .....	40, 44, 46
Lombard & Matthewson, Superphosphate .....	38, 42, 46
Maize Ensilage, analyses of .....	110
"    Kernel, analyses of .....	106
Mapes' Formula and Peruvian Guano Co., Complete Manure, "A" Brand .....	37, 41, 46
"    "    "    "    "    for light soils .....	37, 41, 46
"    "    "    "    "    Corn Manure .....	53, 55, 57

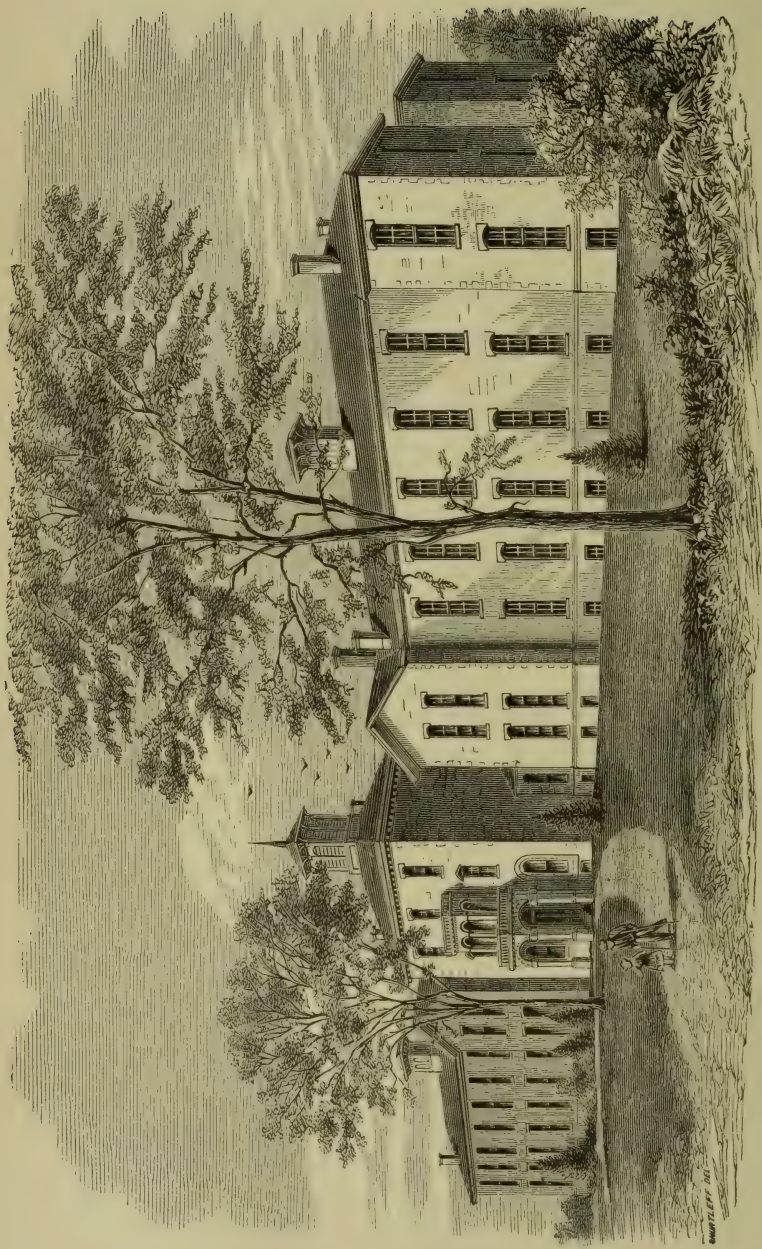
	Page
Mapes' Formula and Peruvian Guano Co., Grass and Grain Top Dressing . . .	52
"          "          "          High Grade Superphosphate . . . . .	32, 33
"          "          "          Muriate of Potash . . . . .	68
"          "          "          Nitrate of Soda . . . . .	65
"          "          "          Potato Manure . . . . .	53, 54, 57
"          "          "          Tobacco Man. for use with stems	53, 54, 56
"          "          "          "          Conn. Brand . . . . .	53, 54, 56
Marine Mud, analysis of . . . . .	73
Marl, analysis of . . . . .	75
Meat and Plaster, analysis . . . . .	66
Middlings, analysis of . . . . .	33
Milk . . . . .	10
Miles, G. W. Co., Fish and Potash . . . . .	38, 42
"          Superphosphate . . . . .	46
Miller, G. W., Ground Bone . . . . .	59, 61
"          Raw Bone Phosphate . . . . .	34, 38, 42, 46
Mitchell, A., Standard Superphosphate . . . . .	40, 44
Muck, analyses of . . . . .	74
Muck Land, fertilizing of . . . . .	95
Mud, Marine, analysis of . . . . .	73
Muriate of Potash, cost of Potash in, during 1884 . . . . .	81
National Fertilizer Co., Chittenden's Fish and Potash . . . . .	39, 43
"          "          "          Grain Fertilizer . . . . .	52, 55, 57
"          "          "          Root Fertilizer . . . . .	52, 55, 57
"          "          Cooke's Blood Guano . . . . .	40, 44
"          "          "          Dissolved Bone . . . . .	40, 44
"          "          Muriate of Potash . . . . .	68
"          "          Sulphate of Ammonia . . . . .	66
"          "          Plain Superphosphate . . . . .	32, 33
Navassa Superphosphate . . . . .	32, 33
North Carolina Acid Phosphate . . . . .	32, 33
New Haven Fertilizer Co., Standard Superphosphate . . . . .	40, 44
Nitrate of Soda, analyses . . . . .	65
"          cost of Nitrogen in, during 1884 . . . . .	80
Nitric Acid, explanations concerning . . . . .	23
Nitrogen of Ammonia Salts, wholesale quotations and retail price in 1884 .	79
"          Nitrate of Soda, wholesale quotations and retail price in 1884 .	80
Nitrogen, Organic, explanations concerning . . . . .	23
"          wholesale quotations and retail price in 1884 . . . . .	78
Officers of the Station . . . . .	2
Paper Mill Waste, analysis of . . . . .	73
Peach Wood, healthy and diseased, analyses of . . . . .	93
Peck Brothers, Boiled Bone . . . . .	59, 61
"          Ground Bone . . . . .	59, 61
"          Raw Kitchen Bone . . . . .	60, 62
Phosphate, Rock, analyses of . . . . .	29
Phosphatic Materials, wholesale quotations and retail price in 1884 . . . .	80
Phosphoric Acid, insoluble, explanations concerning . . . . .	24

	Page
Phosphoric Acid, reverted, explanations concerning.....	23
"          soluble,          "          "          .....	23
Plaster, analyses of .....	75
Pollard's Fertilizers.....	76
Potatoes, analyses of .....	107
Potash, Actual, wholesale quotations and retail price in 1884.....	81
"      explanations concerning .....	24
"      Salts, analyses of .....	68
Preston, H. & Sons, Bone Superphosphate .....	38, 42
"      "      Dry Ground Fish Guano.....	64
"      "      Ground Bone.....	60, 62
Quinnipiac Fertilizer Co., Dry Ground Fish .....	64
"      "      Extra Superphosphate .....	40, 44
"      "      Fish and Potash, Plain Brand.....	38, 42
"      "      "      Crossed-Fishes Brand.....	39, 43
"      "      Phosphate .....	38, 42, 46
Read & Co., Farmer's Friend Dissolved Bone.....	39, 43
"      Matchless Tobacco Manure .....	54, 56
Reed, John, Ground Navassa Rock .....	29
"      Navassa Superphosphate .....	32, 33
Report of the Board of Control .....	7
"      "      Building Committee .....	121
"      "      Director .....	9
"      "      Treasurer .....	8
Rogers & Hubbard Co., Damp Bone Saw Dust.....	59, 61
"      "      Ground Bone, Grade "AX" .....	59, 62
"      "      Raw Knuckle Bone, Grade "A" .....	59, 61
"      "      "      "      Meal .....	59, 61
Sampling fertilizers for analysis .....	90
Sanford, Charles, Bone Superphosphate .....	37, 41
Seeds .....	119
Shoemaker, M. L., Swift Sure Superphosphate .....	37, 41
"      "      "      Bone Meal .....	59, 61
Slade, F. C., Ground Bone .....	59, 60, 61, 62
Smith, E., Ground Bone.....	59, 61
Spear, Jr., Chas., Penguin Island Guano.....	30
Special Manures .....	50
Stearns & Co., Bone Superphosphate .....	40, 44
"      Dry Ground Fish Guano.....	64
"      No. 1 Eagle Brand Fish and Potash.....	40, 44
St. Louis Lead and Oil Co., Castor Pomace.....	67
Stockbridge Corn and Grain Manure.....	53, 55, 57
"      Forage Crop.....	53, 55, 57
"      Grass Top Dressing .....	53
"      Vegetable Manure .....	53, 55, 57
Straw, Rye, analysis of.....	109
Superphosphates, Nitrogenous .....	34
"      Plain (Non-Nitrogenous).....	31

	Page
Thomson, Paul, Charter Oak Fertilizer .....	40, 44
Tobacco Crop, supply of Lime for .....	87
"    Leaf, analyses of .....	96
"    Stalks, analyses of .....	104
Trade values of fertilizing ingredients in raw materials and chemicals ....	25
"        in superphosphates, specials and mixed fertilizers of high grade .....	26
Valuation of a fertilizer, explanations concerning .....	24
"        to obtain it in a fertilizer .....	27
"        "        "        sample of bone .....	27
"        uses of .....	27
Webb, J. J., experience with Home-made Phosphate .....	47
Wilcox, L. & Co., Acidulated Fish Guano .....	37, 41
"        Dry Ground Fish Guano .....	64
"        Prepared Fertilizer .....	37, 41
Williams, Clark & Co., Americus Bone Superphosphate .....	39, 43
"        "        Fish and Potash .....	37, 41
"        "        Universal Dissolved Bone .....	38, 42
Yellows, analysis of wood affected with the .....	93







HARTFORD HOSPITAL.

TWENTY-NINTH ANNUAL REPORT

OF THE

EXECUTIVE COMMITTEE

OF THE

HARTFORD HOSPITAL,

PRESENTED TO THE DIRECTORS

AT THEIR

*Annual Meeting, December 17, 1884.*

---

HARTFORD, CONN.:

PRESS OF THE CASE, LOCKWOOD & BRAINARD COMPANY.

1885.



# OFFICERS OF THE HARTFORD HOSPITAL,

ELECTED AT THE ANNUAL MEETING, DECEMBER 17, 1884.

---

EDSON FESSENDEN, *President.*  
P. M. HASTINGS, M.D., *Vice-President.*  
WARD W. JACOBS, *Secretary and Treasurer.*

## EXECUTIVE COMMITTEE.

P. M. HASTINGS, M.D.,  
HENRY K. MORGAN,  
GEORGE M. WELCH.

## COMMITTEE ON FINANCE.

EDSON FESSENDEN,  
GEORGE M. BARTHOLOMEW,  
ROLAND MATHER.

## AUDITORS.

GEORGE M. BARTHOLOMEW,  
JONATHAN B. BUNCE.

## LIBRARIAN.

GURDON W. RUSSELL, M.D.

## DIRECTORS.

GURDON W. RUSSELL, M.D.,	HENRY C. ROBINSON,
EDSON FESSENDEN,	GEORGE M. WELCH,
CHARLES M. POND,	HENRY K. MORGAN,
HENRY KENEY,	THOMAS O. ENDERS,
ROLAND MATHER,	P. M. HASTINGS, M.D.,
JONATHAN B. BUNCE,	THOMAS SISSON,
MORGAN G. BULKELEY, <i>ex-officio.</i>	



## CONSULTING PHYSICIANS AND SURGEONS.

GURDON W. RUSSELL, M.D., EBENEZER K. HUNT, M.D.,  
ASHBEL W. BARROWS, M.D., P. M. HASTINGS, M.D.

## VISITING PHYSICIANS AND SURGEONS.

GEORGE C. JARVIS, M.D., W. A. M. WAINWRIGHT, M.D.,  
HORACE S. FULLER, M.D., G. PIERPONT DAVIS, M.D.,  
HARMON G. HOWE, M.D., MELANCTHON STORRS, M.D.

## OPHTHALMIC AND AURAL SURGEON.

WILLIAM T. BACON, M.D.

## GYNECOLOGIST.

P. H. INGALLS, M.D.

## PATHOLOGIST.

WILLIAM W. KNIGHT, M.D.

VICE-PRESIDENTS FOR LIFE BY SUBSCRIPTION OF FIVE HUNDRED DOLLARS  
AND UPWARDS, ALSO DIRECTORS FOR LIFE.

*CHESTER ADAMS,	RICHARD S. ELY,
*T. M. ALLYN,	*FOSTER & CO.,
*A. S. BECKWITH,	*JAMES GOODWIN,
*CHARLES BOSWELL,	*JOHN H. GOODWIN,
*LEE & *BUTLER,	*GEORGE HALL,
GEORGE M. BARTHOLOMEW,	*G. B. HAWLEY,
*JAMES G. BOLLES,	*ELLERY HILLS,
*JOHN BEACH,	C. T. HILLYER,
C. N. BEACH,	*JAMES B. HOSMER,
GEORGE BEACH,	*EDMUND G. HOWE,
J. SEYMOUR BROWN,	HUNT, HOLBROOK & *BARBER,
*SAMUEL COLT,	R. W. H. JARVIS,
CHENEY BROTHERS,	H. & W. KENEY,
*LEONARD CHURCH,	*C. C. LYMAN,
*JOSEPH CHURCH,	*WILLIAM T. LEE,
*GEORGE H. CLARK,	*SAMUEL MATHER,
Mrs. SAMUEL COLT,	*C. H. NORTHAM,
*ERASTUS COLLINS,	*J. M. NILES,
FRANCIS B. COOLEY,	*J. S. NILES,
LEONARD DANIELS,	*H. A. PERKINS,
*CALVIN DAY,	JOSEPH PRATT,
THOMAS M. DAY,	DANIEL PHILLIPS,

\* Deceased.

CHARLES M. POND,  
HENRY C. ROBINSON,  
\*JAMES ROOT,  
\*THOMAS SMITH,  
\*JOSEPH TRUMBULL,  
WILLIAM W. TURNER,  
SAMUEL I. TUTTLE,  
WILLIAM F. TUTTLE,  
Miss MARY W. WELLS,  
\*WOODRUFF & BEACH,  
\*THOMAS S. WILLIAMS,

\*DAVID WATKINSON,  
\*JOHN WARBURTON,  
\*MARY A. WARBURTON,  
\*ROBERT WATKINSON,  
\*OSWIN WELLES,  
\*N. M. WATERMAN,  
\*Miss ELLEN M. WATKINSON,  
\*Mrs. MARIA WATKINSON,  
\*TERTIUS WADSWORTH,  
\*SAMUEL S. WARD.

DIRECTORS FOR LIFE BY SUBSCRIPTION OF TWO HUNDRED DOLLARS AND  
UPWARDS.

C. H. BRAINARD,  
CHARLES BENTON,  
\*BOLLES & \*SEXTON,  
HIRAM BISSELL,  
BIRCH & BRADLEY,  
J. G. BATTERSON,  
\*E. A. BULKELEY,  
\*THOMAS K. BRACE,  
\*LUCIUS BARBOUR,  
CASE, TIFFANY & CO.,  
\*ELISHA COLT,  
\*NEWTON CARTER,  
H. KENDALL CARTER,  
\*WILLIAM L. COLLINS,  
CHARLES COLLINS,  
\*DANIEL P. CROSBY,  
JULIUS CATLIN,  
\*AUSTIN DUNHAM,  
\*DAY, \*GRISWOLD & CO.,  
\*JAMES DIXON,  
EDSON FESSENDEN,  
\*EBENEZER FLOWER,  
\*S. W. GOODRIDGE,  
\*ISAAC HILLS,  
\*HUNGERFORD & CONE,  
NELSON HOLLISTER,  
REV. JAMES HUGHES, V. G.,  
\*H. HUNTINGTON,

E. N. KELLOGG,  
GEORGE S. LINCOLN & CO.,  
\*SIMEON L. LOOMIS,  
\*Mrs. JOSEPH MORGAN  
ROLAND MATHER,  
J. & \*M. MERRIMAN,  
\*WILLIAM MATHER,  
\*JOHN M. NILES,  
\*IRA PECK,  
\*FRANCIS PARSONS,  
\*GUY R. PHELPS,  
\*C. F. POND,  
Miss ESTHER PRATT,  
E. M. REED,  
\*E. C. ROBERTS,  
ROGERS BROTHERS,  
\*ELISHA K. ROOT,  
\*E. G. RIPLEY,  
CHARLES SEYMOUR,  
\*Mrs. ELIZA K. SHEPARD,  
\*WILLIAM L. STORRS,  
E. TAYLOR & CO.,  
\*O. G. TERRY,  
\*ISAAC TOUCEY,  
\*MILES A. TUTTLE,  
GEORGE M. WELCH,  
\*JAMES H. WELLS.

---

\* Deceased.

EXECUTIVE OFFICERS OF THE HARTFORD HOSPITAL,  
FOR THE ENSUING YEAR.

---

EXECUTIVE COMMITTEE.

P. M. HASTINGS, M.D.,  
HENRY K. MORGAN,  
GEORGE M. WELCH.

SUPERINTENDENT.

LEANDER HALL.

RESIDENT-PHYSICIAN AND SURGEON.

HORACE C. DEAN, M.D.

ASSISTANT RESIDENT-PHYSICIAN AND SURGEON.

D. CHESTER BROWN, M.D.

LADY SUPERINTENDENT OF TRAINING-SCHOOL.

MRS. F. A. TUTTLE.

APOTHECARY.

HENRY W. FULLER.

STEWARD.

WILLIAM H. PORTER.

REPORT OF THE EXECUTIVE COMMITTEE  
OF THE  
HARTFORD HOSPITAL,  
FOR THE YEAR ENDING SEPTEMBER 30, 1884.

---

*To the Directors:*

In presenting the twenty-ninth annual report of the management of the Hartford Hospital, the Executive Committee would congratulate the friends of the institution upon the great amount of good accomplished in this, as well as in years past, and also upon the increasing appreciation of its value by the public at large.

Since the opening of the hospital, in 1860, nearly ten thousand persons have been admitted to its wards.

It is now generally known that its doors are always open to the injured, in case of accident, without any formal application. In cases less urgent, requiring medical or surgical treatment, and the aid of skilled nursing, the largest liberty of admission has been freely exercised.

The members of the medical and surgical staff have been punctual and faithful in the discharge of their duties.

The Committee would present a brief summary of the work done during the past year.

The number of patients remaining at the close of the year 1883, was 97; admissions during the current year were 701,—making an aggregate of 798.

Of these, 363 have been discharged cured; 158 removed improved; 69 not improved, and 15 eloped or discharged.

There have been 93 deaths,—21 of consumption, 18 hopeless cases of accident, surviving a few hours only after admis-

sion. Many other deaths were the result of injury occurring at a longer or shorter period after admission.

The want of suitable accommodations in the earlier part of the year made it necessary to decline the admission of obstetrical cases. Since the completion of the new Lying-in Ward, there have been 15 births.

The daily average of patients was 98.

The maximum number for one day was 118.

The minimum number was 86.

The total expenditure for the year was \$65,328.43.

The ordinary hospital expenses were	-	\$36,701.79
Cost of Lying-in Ward was	-	25,942.82
Cost of Port Cochere,	-	1,208.67
Expended for Portraits,	-	684.75
Cottage for Infectious Diseases,	-	600.00
Tablet to the memory of Dr. Hawley,	-	190.40
Total,	-	<u>\$65,328.43</u>
The total income from all sources was	-	41,992.35
Excess of expenses over receipts,	-	<u>\$23,336.08</u>

The cost of each patient, per week, was \$6.52, a slight reduction from the previous year.

In view of the large amount of indebtedness incurred the past year in building and needed repairs, the Committee would not recommend any outlay the coming year beyond the necessary repairs. The buildings and grounds are in excellent condition, and the Committee believe that the current expenses for the ensuing year will be materially decreased.

The permanent fund has been increased by bequests, as follows, viz.:

Mrs. Chas. H. Northam, \$45,377.59.

The Training School for Nurses has been increased to the number of twenty pupils. Under the judicious management of the Lady Superintendent, Mrs. Tuttle, the school has been highly successful.

The number of applicants for positions in this department



is largely in excess of its limited capacity. The demand for trained nurses is still beyond the ability to supply.

The graduates of this school are always in requisition, and their skill and lady-like carriage are fully appreciated by the public.

The improvement in the care of the patients in the hospital, since the establishment of this school, is notable, and reflects great honor upon its management.

The accompanying report of the Superintendent furnishes full details of Hospital work, and is worthy of examination :

### OLD PEOPLE'S HOME.

Owing to unavoidable circumstances the building commenced more than two years since was not completed until November of the present year, when it was thrown open for public inspection, and soon after, for the reception of inmates. The rules adopted for the admission and government of this department by the Directors will be found appended to this report. The Committee regret that the means at their disposal at present will not justify them in receiving permanent inmates upon the payment of a moderate admission fee. This department was never intended by its founders to be free, but to furnish a comfortable home for persons of good character, and of both sexes, who from loss of property and of friends are in need, and require care. Poverty, and a good character, are essential requisites to the enjoyment of this charity. It gives the Committee great pain to be obliged to refuse admission to many worthy, and in all respects proper applicants for this Home. Many such persons have been looking forward to the completion of this building as a home for their old age. Until funds are furnished the Committee will be compelled reluctantly to adhere to the rules already published.

We feel confident that when the demands upon this charity, and the amount of good that can be accomplished by its agency is fully understood by those in the enjoyment of wealth, ample provision will be made for its endowment.

As administrators of the Hospital, your Committee are, as their predecessors in office were, deeply impressed with the need and importance of this charity.

The cost of the building was - - \$112,858.95

The side-walk, grading, insurance, coal, and  
incidental expenses, - - 3,188.90

Making a total of - - \$116,047.85

The amount received and acknowledged in the last report was \$80,910.00.

The amount contributed during the year past was \$3,000.00.

Mrs. Lucina H. Goodwin, - \$2,500.00

Chas. T. Hillyer, - - 500.00

\$3,000.00

Making a total of - - \$83,910.00

Interest on deposits, - - 637.85

Total receipts, - - \$84,547.85

Leaving a debt of \$30,500.00.

The Home has been furnished in part. It was estimated that with thirty inmates received upon the terms already fixed, by strict economy the Home could be kept open without materially increasing the amount of indebtedness.

Mrs. E. J. Fox has been appointed Matron, and has proved herself admirably fitted for the position.

Mr. Leander Hall, for the past eleven years Superintendent of the Hospital, whose ability and success has so often been endorsed by the former, as well as by the present Executive Committee, will have the general superintendence of the Home.

The Committee wish gratefully to acknowledge the services rendered by the Rev. E. P. Parker, D.D., and by the Professors and students of Trinity College, in holding religious services in the wards of the Hospital during the year past.

P. M. HASTINGS, M.D.,

H. K. MORGAN,

GEORGE M. WELCH.

HARTFORD, December 17, 1884.

TABLE OF DISEASES, INJURIES, ETC.,  
TREATED IN  
HARTFORD HOSPITAL,  
DURING THE YEAR ENDING SEPTEMBER 30, 1884.

MEDICAL.

	Male.	Female.		Male.	Female.
Aneurism of Aorta,	1		Heart, Dilatation,	1	
Anemia,	2	2	Mitral Stenosis,	1	
Apoplexy,	5	1	Mitral Regurgitation,	4	
Abortion,		4	Aortic	2	
Alcoholism,	11	1	Hysteria,		1
Asthma,	2	1	Hepatitis,	1	2
Bright's Disease, Acute,	1		Hemiplegia,	5	3
Chronic,	10		Hypochondria,		1
Bronchitis,	7	3	Insanity,	2	2
Chorea,	1	1	Infant,	12	7
Congestion of Liver,	1	1	Lead Poisoning,	2	
Chlorosis,		1	Masturbation,	1	
Constipation,	1		Menopause,		1
Cholera Morbus,		1	Malarial Poisoning,	9	4
Cirrhosis of Liver,	2		Malignerer,	8	
Dementia,	2	1	Mania, Acute,		2
Diarrhœa, Chronic,	1		Mania à Potu,	1	
Dysentery,		2	Leucocythemia,	1	2
Dyspepsia,	1	1	Neuralgia,		3
Debility, General,	7	7	Paralysis Agitans,		1
Nervous,	1		Poison, Corrosive,		1
Senile,	4	4	Progressive Locomotor		
Diabetes, Mellitus,	1		Ataxia,	1	
Embolism,	1		Pregnancy,		22
Eczema,	3	1	Pleurodynia,	1	2
Epilepsy,	2		Peritonitis,	2	
Fever, Continued,		2	Pleurisy,	3	
Intermittent,	12	10	Sub Acute,		1
Remittent,			Paresia, General,		2
Typhoid,	8	2			

	Male.	Female.		Male.	Female.
Phthisis,	42	19	Sciatica,	2	1
Pneumonia,	7		Scrofulosis,	1	
Pleuro,		1	Uræmia,	1	
Rheumatism, Acute,	18	3			
Chronic,	15	3			
Gonorrhœal,	1		Total,	231	180

## SURGICAL CASES.

	Male.	Female.		Male.	Female.
Abscess of Neck,	1		Frost Bite,	4	
of Hand,	1		Fracture, Colles,		1
of Axilla,		1	Potts,	3	1
of Urethra,	1		of Vertebrae,	3	
Sub Maxillary,		1	of Femur,	5	2
Iliac,	1		Intracap.,		1
Lumbar,	1		of Tibia,	6	
Palmar,	5		of Ribs,	3	1
Amenorrhœa,		1	of Skull,	2	
Adenoma,	1		of Clavicle,		3
Bubo,	3		of Scapula,	1	1
Burns,	2	3	of Humerus,	2	3
Cancer of Breast,		6	of Tibia and Fibula,	5	
of Bladder,	1		of Tibia and Fibula,		
of Mouth,	1		Compound,	2	
Contusion of Hip,	1		of Foot, Compound,	2	
of Ankle,	2		of Tibia and Fibula,		
of Back,	2	1	Compound, Com.,	8	
of Face,	4	2	of Fore Arm, Com-		
of Thigh,	2		pound, Com.,	1	
of Arm,	1	2	of Femur, Compound,		
Chancroids,	9		Com.,	2	
Concussion of Brain,	2		of Carpus, Compound,		
Caries of Tibia,	1		Com.,	1	
Cystitis, Chronic,	4	2	of Crest of Ilium, Com-		
Dislocation of Hip,	3		pound, Com.,	1	
Erosion of Cervix,		1	Gangrene,	1	
Enchondroma of Orbit,		1	Gonorrhœa,	6	
Epulis,		2	Hæmorrhoids,	1	2
Epistaxis,	1	1	Hydrocele,	3	
Epididymitis,	5		Hernia, Inguinal,	2	
Enchondroma of Antrum,		1	Inversion of Uterus,		1
Fistula in Ano,	3		Impetigo,	1	
Urethral,	1		Irritable Stump,	1	

	Male.	Female		Male.	Female.
Ingrowing Toe nail,	1		Scrofulosis,	1	
Lupus,	2	1	Tumor, Ovarian,		2
Lipoma,	1		Cystic,	1	
Lacerated Cervix,		1	Abdominal		1
Morbus Coxarius,	1	2	of Antrum,		1
Metritis,		3	Tonsillitis,	3	2
Myxoma of Hip,	1		Ulcer, Indolent,	6	4
Necrosis of Tibia,		1	Varicose,	2	1
of Inf. Maxilla,	1		Syphilitic,	6	6
of Femur,	1		Irritable,	1	
of Index Finger,	1	2	Urethral Stricture,	6	
of Os Calcis,	1		Undeveloped Uterus,		1
of Ribs,	2		Uterine Cancer,		5
Orchitis,	3		Varicose Veins,	1	
Pott's Disease of Spine,	1	2	Varicocele,	1	
Prolapsus of Uterus,		1	Wound of Scalp, Lac-		
Periostitis,	1		erated,	5	
Psoriasis,		1	of Hand, Lacerated,	4	
Polypus of Ear,	1		of Foot, "	1	
Retention of Urine,	2		of Arm, "	1	
Ruptured Perineum,		1	of Face, "	1	
Rachitis,	1		of Scalp, Incised,	1	
Retroversion,		1	of Knee, "	1	
Synoritis,	2	1	of Hand, "	1	
Sprain of Shoulder,	2		of Back, "	1	
of Ankle,	7		of Eye, "	1	
of Knee,	1		of Throat, "	2	
of Thigh,	1		of Abdomen,	1	
Syphilis, Primary,	2		of Thorax, Punctured,	1	
Secondary,	6	4	of Head, Gun-shot,	1	
Cerebral,	2				
Secondary Cancer,	1				
Scalds,	1	2	Total,	452	215

## EYE AND EAR DISEASES.

	Male.	Female.		Male.	Female.
Cataract,	5	1	Ophthalmia, Purulent,		1
Conjunctivitis,	1		Strabismus,	3	2
Choroido-Retinitis,	1		Trachoma,	1	
Glaucoma,	1		Ulcer of Cornea,	1	2
Granular Lids,	2	1	Removal of Eye-ball,		1
Iritis,	2	3			
Irido-Keratitis,		1			
Keratitis,	2	1	Total,	21	13
Media Otitis,	2				



## BIRTHS.

Males, . . . . . 11	Females, . . . . . 4
---------------------	----------------------

## TABLE OF DEATHS.

Abscess of Lung, . . . . . 1	Amyloid Kidney, . . . . . 2
Apoplexy, . . . . . 5	Ovarian Tumor, . . . . . 2
Acute Mania, . . . . . 2	Puerperal Peritonitis, . . . . . 3
Aneurism of Aorta, . . . . . 1	Phthisis, . . . . . 21
Acute Tuberculosis, . . . . . 1	Pott's Disease of Spine, . . . . . 1
Bright's Disease, Chronic, . . . . . 4	Pleurisy, . . . . . 1
Cancer, Secondary, . . . . . 2	Pneumonia, . . . . . 2
Cancer of Uterus, . . . . . 3	Pneumonia, Double, . . . . . 3
Cancer of Breast, . . . . . 3	Peritonitis, . . . . . 2
Cancer of Bladder, . . . . . 1	Shock from Accidents, . . . . . 3
Cancer of Lip, . . . . . 1	Syphilis, Tertiary, . . . . . 2
Cancer of Antrum, . . . . . 1	Senile Debility, . . . . . 6
Cirrhosis of Liver, . . . . . 1	Suicide, cut Throat, . . . . . 1
Cystitis, Chronic, . . . . . 1	Suicide, Poison, . . . . . 1
Empyema, . . . . . 1	Septicaemia, . . . . . 1
Erysipelas, . . . . . 1	Stab wound of the Intestines, . . . . . 1
Exhaustion, . . . . . 1	Typhoid Fever, . . . . . 3
Fracture of Axis, . . . . . 1	Uræmia, . . . . . 1
Fracture of Tib. and Fib., . . . . . 2	
Fracture of Femur, . . . . . 1	93
Fracture of Femur with Mania-à potu, . . . . . 3	

HORACE C. DEANE, M. D., }  
D. CHESTER BROWN, M. D. } *Resident Physicians.*

## SUPERINTENDENT'S REPORT.

---

*To the Executive Committee :*

GENTLEMEN:—I respectfully submit to you the twenty-ninth annual report of the management of the Hartford Hospital.

It consists of a report of all the receipts and disbursements, statistics respecting the patients under treatment during the year, and the work of the Training School for Nurses, together with such other information as I have thought would be interesting to you.

The number of patients in the Hospital October 1, 1883, was 97—61 males, 36 females; during the year 701 have been admitted, making an aggregate of 798 patients under treatment—534 males, 264 females; of this number 362 have recovered, 158 removed improved, 69 not improved, 15 eloped or expelled, 93 have died, and 101 remain under treatment—58 males, 43 females.

Of the deaths many were the result of accidents, and lived but a short time after admission; 18 were hopeless cases and lived but a few days after being admitted; 21 were due to consumption.

There have been 15 births—11 males, 4 females.

At the beginning of the year we were obliged to refuse obstetrical patients, and none were admitted until the new ward especially designed for such cases was opened, which will account for the small number of births.

The whole number of weeks occupied was 5,090, of which citizens occupied 4,219, Connecticut soldiers 820, U. S. Marine patients 51. There have been 35 patients occupying 104 weeks, supported entirely by charity.

The appropriation from the State of \$5,000.00 has partially

supported 681 patients at the rate of \$1.19 per week for each patient.

The number of Connecticut soldiers was 73.

The number of Marine patients was 16.

The daily average of patients for the year was 98.

The greatest number any one day was 118, the least 86.

The average duration of patients was  $6\frac{3}{7}$  weeks.

The average cost per week for each patient was \$7.20.

There have been 355 Americans and 346 foreigners.

Patients were received from 60 different towns in the State.

The average cost per week for each patient, deducting the expense of furnishing new ward, was \$6.52.

The Training School for Nurses has been increased in number to 20, and continues to be a very satisfactory and important branch of Hospital work.

Most excellent reports are received from those of our graduates who have settled in this and other cities, and the demand for the trained nurse increases.

As the success of those intelligent women who have chosen this field as a means of self-support becomes known, an increased number of applicants for positions in the school is the result, enabling us to select only those who possess the very best of the necessary qualifications, thereby elevating the standard of the trained nurse; 38 private families have been supplied with nurses direct from our school, and for many others we have secured the services of our graduates.

The nurses sent from the school have aggregated 156 weeks and have been sent to the following towns, besides Hartford—Middletown, Warehouse Point, Thomaston, Meriden, Manchester, Windsor, Forestville, Norwich, Norfolk, New London, and Narragansett Pier, R. I.

The graduates during the year have been—Miss F. Emma Strickland, Miss Emma J. Osborne, Miss Hattie E. Fuller, Miss Maria A. Clark, Miss Jennie M. Beardsley, and Miss Alice M. Gardner.

## SUPERINTENDENT'S REPORT.

*The HARTFORD HOSPITAL**in account with LEANDER HALL, Superintendent.*

Dr.		Cr.	
1883-84. To Am't paid for		1884. By Am't received from	
Breadstuff,	\$805.34	W.W. Jacobs, Treas.,	\$36,701.79
Barn Expenses,	211.97	Board of Patients from vari-	
Butter and Eggs,	1,815.05	ous towns in the State,	9,106.56
Fuel,	3,509.47	Paying Patients,	6,754.91
Furniture,	2,643.64	Board of Soldiers,	4,513.07
Fruit and Vegetables,	1,016.62	State Appropriation,	5,000.00
Freights and Cartage,	18.23	Marine Patients,	344.90
Groceries,	1,375.78	Service of Nurses,	1,519.01
Gas,	860.30	Registrar of Births,	31.00
Repairs and Improvements,	1,846.09	Sales,	82.14
Insurance,	75.00		
Ice,	175.00		
Instruments,	47.05		
Meat, Fish, and Fowl,	6,564.87		
Milk,	1,540.22		
Medicine,	748.90		
Miscellaneous,	170.12		
Printing, Stationery, etc.,	271.20		
Portraits,	150.00		
Salaries, Wages,	11,403.53		
Washing and Soap,	265.04		
Whisky, Wine, etc.,	475.72		
Water,	268.00		
Surgical dressings, etc.,	444.65		
Total current expenses,	\$36,701.79		
Am't paid Treasurer, board			
of Patients, etc.,	27,350.69		
	<u>\$64,052.48</u>		<u>\$64,052.48</u>

*Detailed Statement of the Receipts of the HARTFORD HOSPITAL from  
Oct. 1, 1883, to Oct. 1, 1884.*

## Received from State Appropriation:

December 31, 1883,	-	-	-	\$1,250.00
March. 31, 1884, -	-	-	-	1,250.00
June 30, 1884, -	-	-	-	1,250.00
September 30, 1884,	-	-	-	1,250.00

\$5,000 00

## Received from the State for Board of Soldiers:

December 31, 1883,	-	-	-	\$865.38
March 31, 1884,	-	-	-	1,116.47
June 30, 1884,	-	-	-	982.52
September 30, 1884,	-	-	-	1,548.70
				<hr/>
				\$4,513.07

## Received from U. S. Collector for Seamen:

December 31, 1883,	-	-	-	\$58.00
March 31, 1884,	-	-	-	157.00
June 30, 1884,	-	-	-	52.00
September 30, 1882,	-	-	-	77.00
				<hr/>
				\$344.00

## Received from various towns in the State:

December 31, 1883,	-	-	-	\$2,464.19
March 31, 1884,	-	-	-	2,344.76
June 30, 1884,	-	-	-	2,168.52
September 30, 1884,	-	-	-	2,129.09
				<hr/>
				\$9,106.56

## Received from Paying Patients:

December 31, 1883,	-	-	-	\$1,302.20
March 31, 1884,	-	-	-	1,543.54
June 30, 1884,	-	-	-	1,709.63
September 30, 1884,	-	-	-	2,199.54
				<hr/>
				\$6,754.91

Received from Sales,	-	-	-	-	\$82.14
Received from Register of Births and Deaths,	-	-	-	-	31.60
Received from Services of Nurses,	-	-	-	-	1,519.01
Received from Net income of fund,	-	-	-	-	14,641.66
					<hr/>
Total Receipts,	-	-	-	-	\$41,992.35



*Number of Patients who have received the benefits during the year ending September 30, 1884.*

	Male.	Female.	Total.
Number of patients in the Hospital Oct. 1, 1883, . . . . .	61	36	97
Admitted during the year, . . . . .	473	228	701
Total, . . . . .	534	264	798
Of this number have been discharged:			
Recovered, . . . . .	258	104	362
Improved, . . . . .	104	54	158
Not Improved, . . . . .	40	29	69
Removed, discharged, or eloped, . . . . .	12	3	15
Dead, . . . . .	62	31	93
Total, . . . . .	476	221	697
Remained October 1, 1884, . . . . .	58	43	101
Whole number admitted to October 1, 1884, . . . . .			9,985
" " discharged to October 1, 1884, . . . . .			9,884
" " remaining to October 1, 1884, . . . . .			101

*Monthly admissions from October 1, 1883, to September 30, 1884.*

	Male.	Female.	Total.		Male.	Female.	Total.
October,	50	15	65	May,	38	36	74
November	30	7	37	June,	39	20	59
December,	47	13	60	July,	43	15	58
January,	35	14	49	August,	40	19	59
February,	45	13	58	September,	43	28	71
March,	30	24	54				
April,	33	24	57	Total,	473	228	701

*Occupation of Patients.*

Actress,	1	Domestics,	88	Photographers,	1
Agent,	1	Dressmakers,	5	Polishers,	5
Artist,	1	Engineers,	6	Painters,	13
Beltmaker,	1	Firemen,	2	Plumber,	1
Book-keeper,	1	Farmers,	40	Printers,	4
Boilermakers,	3	Factory Opt.,	14	Peddlers,	9
Bootmakers,	3	Grinder,	1	Quarryman,	1
Butcher,	1	Gardeners,	5	Reporter,	1
Blacksmiths,	12	Housekeepers,	88	Saddler,	1
Barbers,	2	Hostlers,	10	Student,	1
Burnisher,	1	Harnessmakers,	2	Seamstresses,	2
Brakemen,	13	Infants,	15	Sawyers,	3
Bakers,	6	Laborers,	107	Salesman,	1
Bartender,	4	Laundresses,	3	Stonecutters,	6
Currier,	1	Moulders,	9	Slaters,	2
Coachmen,	6	Masons,	12	Seamen,	27
Carver,	1	Mechanics,	14	Tinners,	2
Clerks,	8	Merchants,	8	Telegrapher,	1
Cooks,	7	Machinists,	16	Teamsters,	8
Carpenters,	15	None,	37	Tailors,	8
Cigarmakers,	5	Nurses,	4	Waiters,	3
Dentist,	1	Professor,	1	Weavers,	5
Dyers,	3	Porters,	3		

*Residence of Patients.*

Avon,	Granby,	Plainville,
Barkhamsted,	Haddam,	Portland,
Brooklyn,	Hampton,	Putnam,
Bristol,	Hebron,	Plainfield,
Bloomfield,	Hartford,	Stonington,
Berlin,	Killingly,	Suffield,
Cromwell,	Ledyard,	Saybrook,
Chester,	Manchester,	So. Windsor,
Cheshire,	Morris,	Simsbury,
Colchester,	Middletown,	Thomaston,
Canton,	Meriden,	Thompson,
Canaan,	Middlefield,	Tolland,
Danbury,	Norfolk,	Vernon,
Derby,	Naugatuck,	Wallingford,
Enfield,	Newtown,	Windsor,
East Hartford,	New Haven,	Windsor Locks,
East Windsor,	New London,	Wethersfield,
Ellington,	New Britain,	Winsted,
Farmington,	Newington,	Waterbury,
Glastonbury,	Norwich,	West Hartford.

*Nativity of Patients.*

Alabama,	2	Maine,	2	Penn,	7
Austria,	2	Minnesota,	2	Rhode Island,	6
Canada,	14	Missouri,	1	Russia,	4
Connecticut,	244	Nova Scotia,	3	Switzerland,	4
England,	27	New Hampshire,	4	Sweden,	28
France,	7	New York,	32	Scotland,	6
Germany,	52	New Jersey,	7	Vermont,	11
Ireland,	181	No. Carolina,	2	Virginia,	2
Italy,	13	Ohio,	3	Wash. Territory,	1
Mass.,	27	Poland,	3	Wales,	1
Maryland,	2	P. E. Island,	1		

Americans, 355.

Foreigners, 346.

Temperate, 512.

Intemperate, 189.

## GENERAL STATISTICS.

YEARS.	Admitted during the year.	NUMBER EACH YEAR.						Remaining at the end of year.	Daily Average for the year.	NUMBER EACH DAY.	
		Under Care.	Discharged.	Recovered.	Improved.	Not Improved.	Dead.			Greatest.	Least.
1860-1861,	45	45	32	21	7	1	3	13	12	14	1
1861-1862,	258	271	214	159	20	12	23	57	27	85	14
1862-1863,	107	164	141	103	15	5	18	23	18	57	11
1863-1864,	157	180	149	103	14	8	24	31	27	45	21
1864-1865,	132	163	142	102	2	9	29	21	27	31	21
1865-1866,	196	277	172	133	5	8	26	45	35	49	21
1866-1867,	221	266	211	176	8	5	24	55	44	59	29
1867-1868,	251	306	250	183	16	15	36	56	50	63	38
1868-1869,	259	315	260	192	18	16	34	55	55	67	42
1869-1870,	248	339	298	220	21	20	37	41	50	62	36
1870-1871,	329	370	303	210	28	18	50	64	63	67	39
1871-1872,	347	411	345	215	43	46	41	66	62	71	59
1872-1873,	370	436	364	206	70	31	55	68	69	76	56
1873-1874,	452	520	422	299	36	29	58	98	79	98	63
1874-1875,	492	590	486	323	53	29	53	104	95	119	71
1875-1876,	603	707	573	376	64	35	57	134	113	136	90
1876-1877,	599	733	613	378	85	49	72	120	130	149	112
1877-1878,	914	1,034	944	591	117	66	100	90	101	122	80
1878-1879,	538	623	533	307	93	37	68	95	97	113	87
1879-1880,	597	692	589	362	93	38	66	103	94	109	78
1880-1881,	649	752	360	392	99	33	102	92	96	107	83
1881-1882,	736	838	734	404	154	62	89	94	97	115	90
1882-1883,	723	817	720	391	161	63	95	97	94	117	83
1883-1884,	701	798	697	362	158	69	93	101	98	118	86
	9,974		9,559	6,208	1,383	692	1,253				

## DONATIONS.

---

Through the kindness of the editors we have been furnished with the *Hartford Daily Times*, the *Hartford Daily Courant*, the *Hartford Daily Post*, the *New York Medical Journal*, the *National Tribune*, and the *Churchman*.

### *Books, Magazines, Papers, and Periodicals.*

Miss Grace Dennis, Mrs. C. D. Francis, Mrs. A. P. Hyde, Mr. Atwood Collins, Mr. J. F. Judd, Mrs. C. B. Stuart, Mrs. Bunce, Mrs. James A. Smith, Mrs. Wm. C. Mitchell, Mrs. E. S. Brewer, Mrs. C. R. Burt, Thomas Steele, Dryden Phelps, Mrs. U. G. Pitkin.

### *Clothing, Old Linen and Cotton.*

Mrs. Stephen M. Goodrich, Mrs. J. Hurlburt White, Mrs. Henry Hart, Saybrook, Conn., Mrs. Henry Barnard, Mrs. Snow, Miss Elizabeth P. Sheldon, Miss Sooter, Mrs. Joseph Langdon, Miss Sarah Davis, Mrs. Wm. A. Boardman, Mrs. W. A. M. Wainwright, Mrs. Rowland Smith, Mrs. J. W. Bradin, Mrs. C. A. Jewell, Miss Esther Pratt, Mrs. Hoadley, Mrs. J. B. Bunce, Mrs. Atwood Collins, Mrs. Coolidge, R. W. H. Jarvis, J. B. Goodrich, Windsor, Dr. Geo. Russell, Mrs. E. L. Sluyter.

### *Fruit and Flowers.*

Mrs. J. C. Jackson, Mrs. Samuel Hamilton, Mrs. C. T. Marston, Mrs. Palmer, Mrs. Samuel Colt, Mr. T. T. Fisher, G. W. Darling, East Hartford, St. James Church, St. John's Church, Grace Church, Newington, the Union for Home Work Flower Mission, weekly, through the season.

*Thanksgiving and Christmas.*

C. H. Brainard, box figs, 50 oranges, 5 lbs. grapes, bushel apples; Mrs. Samuel Colt, 2 turkeys; Miss Fitzgerald, a Christmas tree; Miss Laura Dunham, games, books, and flowers; Rev. C. J. McElroy, toys; Judge D. W. Pardee, \$3.00.

*Miscellaneous.*

Miss Kilbourne, bed-quilt; Mrs. Wm. C. Mitchell, pair crutches; D. W. Mitchell, 3 billiard cues; S. G. Goodrich, \$20.00; Rev. Francis Goodwin, \$20.00; Geo. W. Cable, \$5.00; Seabury & Johnson, New York, one "lecture case" of samples of medical and surgical plasters, antiseptic dressings, absorbents, etc., etc.

LEANDER HALL,

*Superintendent.*



# ACTS OF LEGISLATION.

---

## **Act Incorporating Hartford Hospital.**

*Resolved by the Senate and House of Representatives in General Assembly convened :*

SECTION 1. That David Watkinson, Ebenezer Flower, A. S. Beckwith, S. S. Ward, A. W. Butler, A. M. Collins, Wm. T. Lee, Job Allyn, Samuel Colt, James B. Crosby, Albert Day, Chester Adams, James G. Bolles, George Beach, Thomas Smith, Jonathan Goodwin, A. W. Birge, Lucius Barbour, and Charles T. Hillyer, and all such persons as are from time to time associated with them, for the purpose of establishing and maintaining a hospital in the city of Hartford, and their successors, be, and they hereby are, incorporated for said purpose, and made a body corporate and politic, by the name of the Hartford Hospital, and by that name shall be capable of suing and being sued, pleading and being impleaded, and may purchase, take, receive, hold, sell, and convey estate, real and personal, to such an amount as may be necessary for the purposes of said corporation; may have a common seal, and the same may alter and change at pleasure, and may make and execute such by-laws and regulations, not contrary to the laws of this State or of the United States, as shall be deemed necessary for the well-ordering and conducting the concerns of said corporation.

SEC. 2. That said corporation shall be governed by the following articles:

ARTICLE 1. This corporation shall be called the Hartford Hospital. Persons contributing for the use of the corporation at any one time the sum of fifty dollars shall be members for life. Persons contributing the sum of five hundred dol-

lars shall be vice-presidents for life, and also directors for life; those contributing two hundred dollars shall be directors for life; those twenty-five dollars shall be members for five years, and those ten dollars shall be members for one year.

ART. 2. In order the better to carry into effect the object of the said corporation, the members thereof shall, at an annual meeting, to be held at such time and place as the by-laws of the said corporation shall direct and appoint, elect from their own number, by ballot, and by a majority of the votes given at such election, twelve persons as directors of the said corporation; and the persons so elected, together with the mayor of the city of Hartford for the time being, shall constitute a board of directors. The directors so elected shall hold their offices for one year, and until others are elected in their places. In case of any vacancy in the board the remainder of the directors shall have power to fill such vacancy until the next election.

ART. 3. The board of directors shall, annually, as soon as may be convenient after the said annual election, elect by ballot from among their own number a president, a vice-president, and shall also elect a secretary and treasurer, who shall hold their offices for one year, and until others are elected in their stead. But as many directors may be chosen as there may be directors by subscription.

ART. 4. The said board of directors shall have power to manage and conduct all the business and concerns of the corporation, and to make such laws as may be necessary for the management and disposition of the estate and concerns of the corporation, and to appoint such officers and servants as they may deem necessary. The medical officers, including all attending and consulting physicians and surgeons, shall be appointed annually. Vacancies occurring before the expiration of a year from the time of any appointment shall be filled by the directors as soon as the same can conveniently be done.

ART. 5. A majority of the corporators shall call the first meeting for the election of officers, at such time and place in

the city of Hartford as they shall appoint, giving three days' notice thereof by publishing the same in the daily papers of the city; and the annual meeting of said corporation shall be held at such time and place, and on such notice as shall be fixed by the by-laws of said corporation.

SEC. 3. This act may be altered, amended, or repealed by the General Assembly.

Approved, May session, 1854.

**Resolution Amending the Charter of the Hartford Hospital.**

*Resolved*, That additional members of said corporation may hereafter be elected to any annual meeting by a two-thirds vote of those present without the payment of any sum of money on the part of members so elected.

Approved, January session, 1881.

**Amendment of the Charter of the Hartford Hospital.**

*Resolved by the Senate and House of Representatives in General Assembly convened:*

SEC. 1. That in addition to the powers already conferred upon the Hartford Hospital, said corporation are hereby authorized to establish, in connection with the present hospital buildings, and upon the hospital grounds, or elsewhere, an Old People's Home, or a department or home for the accommodation, support, and maintenance of such aged and infirm persons as shall, from time to time, be admitted to the comforts and privileges of such department or home, and erect the necessary buildings therefor, and sustain the said home with such funds and means as shall be given for that purpose, or paid by or for the benefit of the persons admitted to said home. The board of directors of said Hartford Hospital shall have the power to make and execute any and all such by-laws, rules, and regulations in relation to such department or home, and the management of the same, and the funds pertaining thereto, and generally all the concerns of said department, not contrary to the laws of this State, or of the United States, as shall be deemed necessary or proper for the

well-ordering and conducting the concerns of said department, and the same to repeal or change at pleasure. And may appoint, if deemed expedient, a board of managers for said department, with such powers as they shall deem proper, and also such officers and servants as they may deem necessary.

All the rights and privileges conferred by the charter of the Hartford Hospital upon persons contributing for the use of said corporation shall be had and enjoyed by persons and parties limiting their contributions to the use of the department for the aged and infirm, as fully and to the same extent as if no such limitation was connected with such contributions.

All the moneys and funds already or which shall be given or contributed for the uses and purposes of the Hartford Hospital shall be confined to and used for the benefit of the hospital department, and all moneys and funds in any way given or contributed for the aged and infirm department shall be held and used exclusively for that department, under such rules and regulations as may be adopted in relation to a division of the common expenses pertaining to the two departments, which cannot be kept separately and accurately divided.

This department of the Hartford Hospital shall be known as the Old People's Home, and any and all moneys, gifts, legacies, devises, bequests, or other contributions, given to the Old People's Home, or for its use, or to the Hartford Hospital, or to any other trustee or trustees, for or in trust for the use of the Old People's Home, shall be good and effectual, and shall be for the use of this department for the aged and infirm created under this act.

SEC. 2. This resolution may be altered, amended, or repealed at the pleasure of the General Assembly.

Approved, June 19, 1873.





---

BY-LAWS

OF THE

HARTFORD HOSPITAL,

AND

RULES OF THE EXECUTIVE COMMITTEE.

---



## BY-LAWS OF THE DIRECTORS.

---

### I. ANNUAL MEETINGS OF THE CORPORATION.

1. The annual meetings of the corporation of the Hartford Hospital shall be held on the second Wednesday in December, in the city of Hartford, at such time and place as the Executive Committee shall appoint, by giving three days' notice in each of the daily papers.

2. At each annual meeting twelve directors shall be elected by ballot from the members of the corporation, who, with the mayor of the city for the time being, shall constitute a board of directors. It is desirable that the old board be reelected, that the Hospital may receive the benefit of their experience. At least eight of them, if eligible, shall be reelected, but if eight of them are not eligible, the members of the old board who are eligible shall be reelected, and the balance shall be chosen from members of the corporation.\*

### II. DIRECTORS' MEETINGS.

1. The directors shall hold their annual meetings on the third Wednesday in December, unless some other time is more convenient. Notice of the time and place shall be given to each director by the Secretary.

2. Three of the directors shall constitute a quorum.

3. The President, or in his absence the Vice-President, or three members of the corporation, shall call special meetings of the directors, and notice of the time and place shall be given to each member by the Secretary.

4. The directors, at their first or adjourned meeting after election, shall select from their own number an executive

---

\* See the Charter and Amendments.

committee of three persons, which committee shall be the agent of the directors in the internal management of Hospital affairs. It is advisable to select said committee from those persons who are willing to give what time is necessary for the good of the institution, and they should be continued in office unless some special cause forbids, as their experience renders their services more valuable. In case any of the Executive Committee are incapacitated from performing their duties, or do not act for the best interests of the institution, the directors may appoint one or more of their own number to supersede them, either temporarily or permanently, as circumstances may require. At said meeting the directors shall also elect such number of physicians and surgeons as may be advisable to take charge of the medical and surgical departments; said physicians and surgeons having been first nominated by the visiting and consulting medical staff. In case no physicians or surgeons have been nominated by the medical and surgical staff, the directors shall make these appointments independent of such nomination.

### III. EXECUTIVE COMMITTEE.

1. The Executive Committee shall direct the internal management, including the grounds and buildings, both of the Hospital and the Home.

2. Said committee shall appoint a Superintendent to the Hospital and a Matron to the Home, who shall be under the Executive Committee, and answerable to them for their conduct. The committee shall see that all expenditures are judiciously managed, and audit the accounts of both institutions.

3. They shall make all the rules that govern both institutions, and shall be careful that the inmates are provided with such things as are necessary for their comfort and recovery.

4. They shall make all necessary repairs and improvements; superintend and direct the construction of any new buildings which may be decided upon by the directors, as the experience of the committee renders them more capable to perform this service.

5. All orders on the Treasurer for disbursements for both institutions must be signed by the chairman of the Executive Committee, or, in his absence, by either of said committee. Said order must be signed by the chairman on his return.

6. They shall manage, rent, and collect said rent as they deem expedient, from all real estate owned by the Hartford Hospital in the city or town of Hartford.

7. They shall make an annual report to the directors, stating all facts concerning the Hospital and Home that they think advisable; also report to the General Assembly in regard to its annual appropriation of funds for the support of charity patients in the Hospital, to benefit the different towns of the State, as directed by the Legislature.

8. A meeting of the Executive Committee shall be held at the Hospital at least twice during each month to hear the Superintendent's report in regard to the working of the two institutions, and a record of their doings shall be kept by him.

#### IV. VISITING PHYSICIANS AND SURGEONS.

1. The visiting physicians and surgeons shall take charge of the medical and surgical departments, and arrange their times for visiting the Hospital.

2. Acute cases must be visited every day, and chronic cases as often as necessity requires.

#### V. SUPERINTENDENT.

1. The Superintendent shall take charge of the Hospital and Home under the direction of the Executive Committee.

2. All moneys for board of patients at the Hospital and inmates of the Home must be paid to the Superintendent, and all expenses for providing for the two institutions must be paid by the Superintendent, unless otherwise directed by the Executive Committee.

#### VI. MATRON.

It is the duty of the Matron to take charge of the Home, under the direction of the Superintendent.



## VII. PATIENTS.

1. Patients to the Hospital may be admitted by either member of the Executive Committee, subject to the approval of said Committee at their regular Hospital meeting.

2. Inmates to the Home must be admitted and discharged by a unanimous vote of said Committee present at said meeting.

## VIII. COMPENSATION.

Neither the medical staff nor Executive Committee shall receive from the Hospital or Home compensation in any form for duties performed in their behalf.

## IX. AMENDMENTS.

No by-laws shall be altered or amended except by a two-thirds vote of the directors present at an annual meeting—such amendment having first been presented to the board of directors in writing, at a previous annual meeting.

# RULES OF THE EXECUTIVE COMMITTEE

## OF THE

### HARTFORD HOSPITAL.

---

#### I. VISITING PHYSICIANS AND SURGEONS.

1. The visiting physicians and surgeons shall have the entire direction of the medical and surgical department. They shall also exercise a supervision of the condition of the wards, the department of the nurses, and prescribe the diet for patients. They shall give such directions to the Superintendent as shall be necessary in regard to the health and physical condition of the patients, and see that these directions are carefully executed, and their prescriptions faithfully administered. They shall report to the Executive Committee whatever interferes with the welfare of the institution.

2. The regular visits of the visiting physicians and surgeons shall be made daily between the hours of 8 A. M. and 12 M.

3. Extra visits shall be made whenever the necessity of the case demands.

4. They shall report to the Superintendent patients who are in a proper condition to be discharged from the Hospital.

5. No visiting physician or surgeon shall absent himself from duty without notifying some member of the Executive Committee.

6. All surgical operations shall be performed by the visiting surgeon in attendance, or some member of the staff, by his invitation.

7. No capital operation shall be performed without consultation with the medical staff, unless the case requires immediate action.

8. Notice of the time for operating shall be sent by the Superintendent to all members of the staff.

9. No operation shall be performed without the consent of the patient; but if consent cannot be obtained after all the surgeons in consultation have decided that the patient's safety demands it, the visiting surgeon shall advise the discharge of the patient from the Hospital.

## II. RESIDENT AND ASSISTANT SURGICAL AND MEDICAL STAFF.

1. The resident and assistant medical and surgical staff shall consist of two or more physicians and surgeons who are graduates from a medical college.

2. Each of the house staff shall sign an agreement to remain in the service of the Hospital for one year, and conform to its rules and regulations.

3. Each shall serve the first six months as assistant, and the remainder of the term as a resident physician and surgeon.

4. They shall not be absent at the appointed hours for the attendance of the visiting physicians and surgeons, and when desiring to leave the premises they shall arrange with the Superintendent for their absence.

5. Under no circumstances shall all members of the house staff be absent at the same time.

## III. RESIDENT PHYSICIAN AND SURGEON.

1. The duties of the resident physician and surgeon shall be assigned him by the visiting physicians and surgeons, all of whose instructions and directions in regard to the care and treatment of the sick he must promptly and carefully execute.

2. He shall visit the patients in their respective wards every morning and evening, and be prepared to report their condition to the visiting physicians and surgeons.

3. He shall accompany the physicians and surgeons in their daily visits, shall, under their directions, record each case, stating name, age, and disease, with symptoms, treatment, and result, record daily all prescriptions, and note all important facts.

4. He shall, under the direction of the physicians and surgeons, make a report to the Executive Committee of all the diseases and the results of those cases which have been treated in the Hospital during the fiscal year ending the last day of September.

5. He shall send the diet-list prescribed for the day to the lady Superintendent, who will have the food prepared and sent to the wards.

6. He shall see that the medicines are correctly compounded and faithfully administered, the diet properly furnished, and the patients kindly treated by the attendants.

7. The resident physician must report to the lady Superintendent any improper conduct on the part of nurses or patients, but shall not, under any circumstances, attempt to discipline them.

8. In any case of emergency he shall request the immediate attendance of the visiting physician or surgeon; if he cannot be found, any member of the visiting staff shall be called.

9. He shall record the name of the attending physician and surgeon; the day of the week, the date, and time of day when each visit is made. This record must be made immediately after each visit.

#### IV. ASSISTANT PHYSICIAN.

The assistant physician shall attend the resident physician and surgeon in his morning visits to the patients, and shall be present at the regular visits of the attending physicians and surgeons, and shall perform such duties as may be assigned him by the Executive Committee, with the advice of the visiting physicians and surgeons.

#### V. APOTHECARY.

1. The apothecary shall compound and dispense all medicines prescribed, agreeable to the formulas from time to time directed by the physicians and surgeons.

2. He shall not deliver medicines or other articles for use

in the Hospital unless they have been ordered in writing on the ward book by the physicians or surgeons, and entered upon the prescription book.

3. No medicines are to be delivered to any person living out of the Hospital, except under the direction of the Executive Committee.

4. He shall dispense the medicines for each ward separately, and attach to each a label bearing the name of the patient for whom prescribed, with directions for using the same, and shall send them to each ward to be distributed by the nurses.

5. He shall keep spirits, bandages, cloth, etc., in such quantities as directed by the visiting physicians and surgeons.

#### VI. SUPERINTENDENT.

1. The Superintendent is appointed by the Executive Committee. He is executive officer of the board, and responsible to them for the good order of the house. He is to see that their regulations and directions are carried out, and for that purpose shall have general control of all departments of the Hospital.

2. He shall have charge of the subordinate officers, patients, grounds, buildings, and appurtenances, and shall hire and discharge all employees.

3. He shall daily visit and inspect the wards, kitchen, laundry, engine-room, etc., and all other departments, as often as may be necessary, and shall give such directions and make such regulations as will be for the best interests of the institution.

4. He shall pay all bills incurred within and for the uses of the Hospital, purchase all supplies and medicines, have the charge thereof, and be responsible for their proper and economical use.

5. He shall receive all moneys due the Hospital for board of patients, etc., and deposit the same with the treasurer of the directors, and obtain drafts upon him from the Executive Committee, for such sums as may, from time to time, be required for the support of the institution.



6. He shall keep regular accounts of all moneys received and disbursed on account of the Hospital, with a record of all contracts, etc., and submit the same to the Executive Committee at their special or quarterly meetings to be audited.

7. He shall keep, for the inspection of the Executive Committee, a record of the names of all patients, with their age, disease, residence, employment, date of admission, discharge, elopement, or death, and the result of treatment, with such other particulars regarding each as may be desired.

8. He shall make a statement of admissions, discharges, births, deaths, number of patients under treatment, and number of persons residing in the house, and report the same, with such other information as may be of interest, at each regular meeting of the Executive Committee.

9. He shall, at this meeting, report the condition of all patients who in his opinion, or in the opinion of the visiting physician or surgeon, are improper subjects for hospital accommodation, also such as in his or their opinion do not require hospital treatment.

10. Patients shall be discharged by the superintendent under the direction of Executive Committee.

11. He shall assign to each patient, upon admission, the particular bed he is to occupy, subject to the approval of the visiting physician or surgeon, and shall cause his name and date of entrance to be attached to his bed.

12. No patient shall be removed from one bed to another without first consulting the superintendent, or the attending physician and surgeon.

13. He shall suffer no patient to leave the grounds without his permission.

14. He shall keep an inventory of all furniture, and other property belonging to the Hospital, and make an annual report of the same, noting such articles as are destroyed or missing.

15. He shall return to the city registrar the births and deaths, and in case of death of any patient shall notify the family or friends, and cause the body to be prepared for burial.

16. No body shall be removed or interred until twenty-four hours after death, except at the request of the relatives.

17. He shall report to the Executive Committee if the deceased left any clothing or articles of value.

18. He shall make a report to the Executive Committee for each year ending the last day of September, containing an account of the receipts and disbursements, number of patients in the Hospital during the fiscal year, together with such information as the Executive Committee may require.

#### VII. MATRON OF THE HOSPITAL.

1. The matron shall have the general direction of the female servants, and see that they faithfully perform their duties.

2. She will be responsible for the neatness and order of every part of the establishment outside of the wards; superintend the kitchen and laundry, and cause an account to be kept of bedding, table, and other furniture.

#### VIII. LADY SUPERINTENDENT OF THE TRAINING-SCHOOL.

1. The lady superintendent shall have general management of the wards, both male and female, and is responsible for their neatness, good order, and strict discipline.

2. It is her duty to see that patients are provided with every means necessary for their recovery, and that nurses are faithful in the performance of their duties.

3. She is subject to the advice and counsel of the superintendent, medical and surgical staff.

#### IX. NURSES.

1. It shall be the duty of the nurses to give undivided attention to the sick, and to report immediately to the lady superintendent any neglect on the part of the patients to conform to the rules prescribed for their government.

2. They shall not attempt to coerce or discipline any patient, but shall treat them with kindness and attention.

3. They shall not absent themselves from the Hospital

without permission from the lady superintendent, and must report to her on their return.

#### X. VISITORS.

1. Visitors are welcome to the Hospital every week-day, between the hours of 2 and 5 P. M., and on Sunday for the purpose of attending divine worship, but on that day they must leave the wards when the services are ended.

2. Visitors shall not enter the wards without the consent of the superintendent or matron.

3. Visitors must deposit with the superintendent or matron any articles of food or delicacies intended for patients, which articles will be distributed as requested if not inconsistent with the condition of said patient.

#### XI. GOVERNMENT OF PATIENTS.

1. Patients, upon admission to the Hospital, shall deposit money and valuables with the superintendent, who will, if desired, give receipts therefor.

2. Patients shall not leave the premises without permission from the superintendent, and they shall report to him on their return.

3. Patients shall not enter the kitchen, cellar, yard, or any of the domestics' apartments, unless by direction of the superintendent or matron.

4. No ardent spirits, or other stimulating drinks, shall be brought into the Hospital by the patients or their friends—neither shall patients be furnished fruit, or any article of food, without the knowledge or permission of the superintendent.

5. There shall be no loud talking, or profane or vulgar language, and no unnecessary noise or disturbance in the building or on the grounds.

6. Spitting on the floor, or other practices inconsistent with neatness, must be avoided, and a proper regard must be observed for cleanliness.

7. No patient shall smoke tobacco in the Hospital.

8. Before lying on their bed, patients must take off their boots and shoes, turn down the outer spread, and each patient will be responsible for the neatness of his bed when not occupied during the day.

9. All convalescents who are able shall assist in their respective wards, when requested by the nurses.

10. The patients shall be in their respective places during the visits of the attending physician and surgeon.

11. Patients shall retire at or before nine o'clock, P. M.

12. It shall be the duty of the lady superintendent to enjoin a strict observance of the above regulations, and she shall report to the superintendent any patient who shall continue to violate the above rules, and, if occasion requires, he may immediately discharge such patient from the institution.

13. No officer or employee of this institution shall accept any gift or bequest from any patient, except with the approbation of the Executive Committee.

## XII. ADMISSION OF PATIENTS TO THE HARTFORD HOSPITAL.

1. All patients are admitted by permits from one of the Executive Committee, who arranges the price per week, according to the circumstances of the case and accommodations required.

2. All permits are subject to the approval of the Executive Committee, at their regular Hospital meeting.

3. Those who are able to contribute toward their support are received at an agreed rate.

4. The ordinary charge per week is \$6.00, which includes medical and surgical care, together with medicine and nursing.

5. Persons who are desirous of extra accommodations are charged according to circumstances.

6. Persons who are destitute of friends and means are provided for in various ways.

7. Those persons only who are carried directly from the place of accident are admitted without a certificate from the Executive Committee.

8. No person having venereal or contagious diseases are admitted into this institution.

HARTFORD, CONN., 18 .

Upon the admission of                      of                      into the  
 "HARTFORD HOSPITAL," at Hartford, I engage to provide or  
 pay for a sufficiency of clothing for                      use, and pay the  
 Treasurer of said institution                      dollars per week for board,  
 medicine, and medical attendance; cause said patient to be  
 removed, when discharged, and, in the event of death, to pay  
 the expenses of burial.

*Principal.*

For value received, I hereby engage to become responsible  
 for the fulfillment of the above stipulations.

*Surety.*



## RULES FOR PUPILS OF THE TRAINING SCHOOL FOR NURSES, HARTFORD HOSPITAL.

---

The Directors of the Hartford Hospital have made arrangements for giving, at the Hospital, two years' training to women desirous of becoming professional nurses.

Persons wishing to receive this course must apply either to the Superintendent of the Hospital or to the lady superintendent of the nurses' school, upon whose approval they will be accepted as pupils in the Hospital.

Candidates must be over twenty-one and under thirty-five years of age. They must be of sound health, and must present, on application, a certificate from some responsible person as to their good character.

Applicants will be received for one month on probation. During this month they are boarded and lodged at the expense of the Hospital, but receive no compensation if they leave before the expiration of the month, or are found incompetent by the lady superintendent.

The Superintendent of the Hospital and lady superintendent of the nurses' school will have full power to decide as to the fitness of the nurses for the work, and the propriety of retaining or dismissing them at the end of the month for trial. The same authority can discharge them in case of misconduct or inefficiency.

They will reside in the Hospital and serve the first year as assistants in the wards of the Hospital; the second year they will be expected to perform any duty assigned them by the lady superintendent, either to act as nurses in the Hospital or to be sent to private cases among the rich or poor.

### TRAINING.

Those persons complying with the foregoing conditions will be accepted as pupils by signing a written agreement to remain at the school for two years, and to conform to the rules of the Hospital.

The instruction includes:

1. The dressing of blisters, burns, sores, and wounds; the preparation and application of fomentations, poultices, and minor dressing.
2. Application of leeches, and subsequent treatment.
3. Administration of enemias.
4. Use of female catheter.
5. The best method of friction to the body and extremities.
6. Management of helpless patients, moving, changing, giving baths in bed, preventing bed-sores, and managing positions.
7. Bandaging, making bandages and rollers, and lining splints.
8. Making beds and changing sheets while the patient is in bed.
9. That no part of the Hospital is clean, if it can be made cleaner.

The pupils are taught to prepare food, together with drinks and stimulants for the sick; to understand the art of ventilation without chilling the patient, both in private houses and hospital wards, and all that pertains to night, in distinction from day-nursing.

To report to the physician accurate observations of the state of the secretions, expectoration, pulse, skin, appetite, temperature of the body, intelligence (as delirium or stupor), breathing, sleeping, condition of wounds, eruptions, formation of matter, effect of diet, stimulants, or medicines, and to learn the management of convalescents.

Instruction will be given by attending and resident physicians, and surgeons at the bedside of the patients, and in various other ways, also, by the lady superintendent and head nurse.

The pupils will pass through the different wards, serving and being taught, for one year. They will be supplied with board and lodging, and will be paid ten dollars (\$10) per month the first year, the second, fourteen dollars (\$14) per month for their clothing and personal expenses. This sum,

with their education, is considered a full equivalent for their services.

When the full term of two years is completed, the nurses thus trained, after passing a final examination, will receive diplomas, certifying to their knowledge of nursing, their ability, and good character.

N. B.—This paper is to be filled in (in the candidate's own handwriting), and sent to the Superintendent of the Hartford Hospital, Hartford, Conn.

#### QUESTIONS TO BE ANSWERED BY CANDIDATE.

1. Name in full, and present address of candidate.
2. Are you a single woman or a widow?
3. Your present occupation or employment?
4. Age last birthday, and date and place of birth?
5. Height? Weight?
6. Where educated?
7. Are you strong and healthy, and have you always been so?
8. Are your sight and hearing perfect?
9. Have you any physical defects?
10. Have you any tendency to pulmonary complaint?
11. If a widow, have you children? How many? Their ages? How are they provided for?
12. Where (if any) was your last situation? How long were you in it?
13. The names in full and addresses of two persons to be referred to? State how long each has known you. If previously employed, one of these must be the last employer.
14. Have you ever been a pupil of any other training-school?
15. Have you read and do you clearly understand the regulations?

I declare the above statement to be correct.

(Signed.)

*Candidate.*

Date.

## FORM OF BEQUESTS.

---

### FORM OF BEQUEST TO THE HARTFORD HOSPITAL.

ITEM. I give and bequeath to the HARTFORD HOSPITAL, in the city of Hartford, the sum of        dollars, to be paid by my executors out of my real or personal estate, as soon as the settlement of my affairs will permit, to the Treasurer of the said institution for the time being, in trust, to be applied by the directors thereof to the humane purposes of said institution.

### FORM OF BEQUEST TO THE OLD PEOPLE'S HOME.

ITEM. I give and bequeath to the HARTFORD HOSPITAL, in the city of Hartford, the sum of        dollars, to be paid by my executors out of my real or personal estate, as soon as the settlement of my affairs will permit, to the Treasurer of the said institution for the time being, in trust, to be applied by the directors thereof to the humane purposes of the department in said institution known and designated as the Old People's Home.





---

---

DEPARTMENT

OF

THE OLD PEOPLE'S HOME.

---

---

## OFFICERS.

---

EDSON FESSENDEN, *President.*  
P. M. HASTINGS, *Vice-President.*  
W. W. JACOBS, *Secretary and Treasurer.*

### EXECUTIVE COMMITTEE.

P. M. HASTINGS, M.D.,  
HENRY K. MORGAN,  
GEORGE M. WELCH.

### SUPERINTENDENT.

LEANDER HALL.

### MATRON.

MRS. E. J. FOX.

## DEDICATION OF THE OLD PEOPLE'S HOME.

---

Dedicatory Exercises of the Old People's Home were held December 18, 1884.

The opening prayer was offered by the Rev. E. P. Parker, D.D., pastor of the South Congregational Church.

P. M. Hastings, M.D., on behalf of the Executive Committee, presented the following historical sketch :

The Executive Committee of the Hartford Hospital consider it proper to make a very brief statement of the circumstances which preceded the erection of the building we propose to-day to dedicate as a Home for the aged and infirm people of the town of Hartford and vicinity, who are destitute and needy.

The Hartford Hospital, of which the home is a department, was incorporated in May, 1884. The building at first occupied for the care of the sick under this title, still stands at the junction of Retreat and Maple Avenues. A portion of the present hospital building was opened for the reception of the sick August 1, 1860.

In the early years of its existence a considerable number of aged and infirm persons were admitted from time to time, for the simple reason that the Executive Committee could not repress their sympathies for these helpless and homeless applicants.

In the annual report made by the Executive Committee in April, 1873, we find the first mention of the necessity for some provision for this class of persons.

This Committee consisted of three persons : Messrs. Edson Fessenden, George B. Hawley, and Chas. H. Northam. The report says that

“Application will be made to the General Assembly at their spring session, to charter an Old People’s Home. The necessity for this home is fully demonstrated by the constant application of this class for admission to the hospital. There are many persons who have received all the blessings of a home, surrounded with friends in the enjoyment of wealth, who, in advanced life, are left destitute of all things that make life desirable. Friends and relatives are dead, and they are alone in their poverty. From urgent necessity there are some of this class admitted to the hospital, and there are many more who are in great need of this home.

“By referring to the proposed charter of the Old People’s Home, it will be observed that this charity can be engrafted on the Hartford Hospital, or can be worked independently. The charter places the power in the Directors, to be guided in their future course as circumstances may direct. There will be no lack of means to sustain this home, if it is once established by a liberal endowment. Nearly every city has its Old People’s Home, and there is equal necessity for its establishment here. At present there are about twelve old persons occupying beds in the hospital wards, who would be proper subjects for this home. They are a worthy class of old persons, who are destitute of homes, and it would be the cause of great suffering if they were refused hospital accommodations. Our wards will soon be so crowded that this class must be refused admission.”

In the report for 1874 the same committee state :

“A charter was granted by the last Legislature for an Old People’s Home. Provision should be made for feeble old persons, when they require hospital accommodations. There are twelve old persons in the hospital who are weak and feeble from age, and their discharge would cause great suffering. There is an urgent necessity for the establishment of this institution.”

The same Committee, in the report for the year 1876, state that—

“There is another class most urgently knocking at the

door of the Hospital. It is the aged, who have been blessed with friends, and who, in days that are past, have not known the trials of poverty. As age advances, their friends and acquaintances have all paid the debt of nature; their pecuniary means are exhausted, and they become helpless and infirm. This class is continually crowding upon us. When rejected or discharged, the miserable accommodations they receive soon develop disease, which makes them regular hospital subjects, according to established rules. These facts appeal to the friends of the Old People's Home, which was chartered in 1873 for the especial care of respectable and indigent, aged and infirm old people."

The report for 1877 states: "There are in the Hospital over fifteen old infirm persons who are not regular hospital patients, but humanity forbids their discharge. To provide for these, and to care for the increasing number of this class, we would call the attention of the public to the charter of the Old People's Home.

"What Christian duty can be found that demands our sympathy more urgently than to provide for the sick and suffering, the old and infirm? The 'Old People's Home' will be erected as soon as funds are furnished for that purpose. With such an abundance in the control of those who are soon to leave their worldly goods, how long must this institution wait?"

In 1878, the report says that "funds have not as yet been received to erect buildings for the care, support, and treatment of the aged and infirm. Those who are advanced in life, and have outlived their friends, and have exhausted all means of support, have a right to ask charity of the more fortunate. We are anxiously waiting for donations to erect the Old People's Home, and the expense will be greatly lessened by placing the buildings on the Hospital grounds."

So, in 1879, the report alludes to the same need: "We would refer our citizens to the charter of the 'Old People's Home' published in this report. The united efforts of a few benevolent individuals would instill new life into the institu-



tion and relieve the Hospital from the care of twenty old and destitute persons, not hospital subjects, and provide for many decrepit and infirm whose only crime is old age. Several wills have been made in favor of the Home, which will insure the success of this institution."

The Executive Committee, having served the Hospital ten years, was, in November, 1881, deprived by death of their faithful and wise associate, Col. Charles H. Northam. Col. Northam was elected President of the corporation in 1878, and served in this position until his death. He was deeply interested, and during his last illness frequently alluded to the urgency of providing a home for the aged and infirm. This interest will be appreciated when we quote from his will, directing that the sum of \$50,000 should be applied towards the erection of a suitable building, connected with the Hartford Hospital, "for the use and occupancy of such aged and infirm poor persons of the city and town of Hartford, without regard to nationality or religious belief, as may be destitute of means and require the aid of the charitable and benevolent."

The report of the year 1881 states:

"The object of the Home is suggested by the name, yet, more definitely stated, it is to supply a comfortable refuge for such estimable and worthy citizens of Hartford of both sexes as are aged and destitute or have only partial means of support. When sick, such persons will be cared for at the Hospital. It is hardly necessary to say that Hartford is behind other cities in its provision for this class of persons. There are already fifteen old persons in the Hospital who have no other home. They are not to be treated as paupers. The Hospital was not built for this class. Its funds were never given for this end. It is only by the force of circumstances that we are partially justified in the employment of a portion of the funds of this institution to provide a temporary home for a few old people. Indeed, in the present demand for beds for legitimate hospital patients, we shall soon be compelled to drive from us the aged men and women

to whom, in the absence of the projected home, the almshouse will be their only resort."

It may be mentioned, the records of the Committee during these ten years show that they rejected a large number of applicants of the class alluded to, far more than they accepted. The claims were often such that they could not refuse. It would be safe to say that nearly or quite one hundred such applications were refused during this period.

The plan of the present building was adopted in the winter of 1882, and its erection commenced in the spring of the same year. Dr. Hawley, who for twenty-eight years had been a most efficient and zealous advocate of the Hospital and of this Home, was not permitted to enjoy the satisfaction of seeing his labors consummated, dying in April, 1883. He always trusted to the benevolent people of Hartford to carry out the plans for the relief of the class which so long had enlisted his most ardent sympathy. He died in the firm belief that this charity would not be neglected. His long experience in the Hospital had convinced him of the necessity of this institution, and during his last illness he often expressed confidence that the benevolence of the citizens of Hartford would place this charity upon a firm basis.

The Dedictory Prayer was offered by the Rev. W. F. Nichols, Rector of Christ Church.

The following Address was delivered by the Hon. H. C. Robinson, one of the Directors of the Hartford Hospital.

*Mr. Chairman and friends of the Hospital:*

We meet to open the doors of a new house, to add another agency to our local benevolence. Dr. Hastings has told the story of its birth. The clergy have asked for it the blessing of Almighty God. And now the officers of the Hospital wish to announce to you, its supporters, and to the public that this experiment of philanthropy is on its way.

You have examined its halls and bed-rooms, its wards, and kitchens and dining-rooms, and we doubt not that you have pronounced them good. If there is a criticism in any mind here I suspect it is that the building is too attractive. If this is so, it is

an error upon the better side. It is the best fruits of our civilization that, by all kinds of ministries, we assist the helpless. A conspicuous American lecturer and writer upon social science, in a little book published within two years, wrote that "A free man in a free democracy has no duty whatever toward other men of the same rank and standing, except respect, courtesy, and good will."

His philosophy overlooks the highest of that freeman's duties, which is the flower of human character. the duty of love; love, which stays not at "ranks," which has no tape-line to measure "standing," but which goes out in tides of strength to make every child of man within its reach better and happier. Upon another page the same author writes that "the relation of parents and children is the only case of sacrifice in nature." His landscape of nature has omitted her best features—the common brotherhood of the race and the humanities of man's spiritual nature. We may as well attempt to exhaust the resources of a violin in a crucible as to seek for the capacities of human nature by the science of political economy alone. When we have brushed the rainbow from the sky and the crimson from autumn leaves, when we have torn out the blue from the fringed gentian and the perfume from the orange blossoms, when we have emptied the ocean surf of its music and hushed the song of the thrushes, we may reduce the power of a smile to a matter of muscular contraction, and may limit the significance of a tear to its chemistries of salt and hydrogen. And it is the glory of our Christian civilization that we do care for the helpless. In the earlier years the epileptic was given over to the devils who held him in their possession; to-day he is nursed to health. Then the maniac was driven to the mountains; now his frenzy is softened by the touch of kindness. The Indian mother ties her infant to a board. Christianity gives the baby a sceptre and the whole family are his servants.

But it has been said with some show of force that in emphasizing the rights and importance of the individual, and in breaking down prerogatives, our civilization, and particularly in democracies, has weakened reverence and has stripped old age of its honor. China bows to the aged in their life and finds its title of immortality at the altars which piety raises for a dead ancestry.

This building makes its humble answer to the criticism. It offers a home to the old for whom no home is provided by the hands of kindred. And is it not a good thing?

Where is there an object which challenges our kindness, if it is not the poor old man, whose arms and brain have lost their power to aid him in the turmoil of an age which demands the best results in trade and labor and profession, whose wife and children have gone away out of his sight, who has no joys and many fears and, what is more, has no hopes for his day of life? He was somebody's father and child; she was somebody's mother and wife. Shall society give them no home but the public almshouse? Shall we leave them to the mercies of public economies and of a begrudged tax? So did not Dr. Hawley think and act; so did not Colonel Northam say and do. And so will not the generous folk of this generous city say and do.

We have much, very much to our credit as a community—nothing so good as this, that in no spot where the sun shines are works of charity more honorable or more freely and intelligently promoted.

The managers of the Hospital regret that this charity cannot be announced as a complete thing. As yet it is too much constrained in its funds, and too heavily burdened with debt to make it as free as desired. But to make it altogether free would probably never be desirable or wise.

As has been said by the chairman of the executive committee, this house is designed for the aged poor; it seeks to give them protection from the storm, a good bed, healthful food and nursing for their disorders. It is not meant to be a boarding-house for those who are in comfortable pecuniary circumstances. To make it absolutely free is a possibility of a far-distant future. The rules which have been adopted by the board, after careful study of the whole subject, are substantially the rules which the experience of similar institutions has demonstrated to be prudent and wise. But it is earnestly desired, in the best interests of this charity, to reduce contributions required of the occupants to the lowest amount. It is for the good people of this community to say whether they are listening to any louder calls for help than this one, which comes from our empty treasury.

This institution, in its buildings across the street, gives constant care, the best attainable medical skill, well furnished rooms and wards, with pure air and healthful diet to a hundred patients a day, victims of disease and accident. It has now enlarged its borders and announced this new ministration of benevolence and



offers a fireside and attendance to those who have no fireside nor attendance, and to whom "the grasshopper is a burden."

Who of us, yes of us, may not walk, bye and bye, in the gray of evening, alone and desolate, weary in heart and empty in purse, glad to knock at these gates for rest? Can we tell? No matter if it is not for us. Some poor travelers, of flesh and blood and sympathies and affections like ours, will totter along these streets, in just that plight, through the coming centuries. Let us hope that no chamber in this goodly house shall be closed to them because it is unfurnished, nor this table be shut against them because the last of its oil and meal has been eaten.

The following address was delivered by Rev. G. L. Walker, D.D.:

The opening of this Old People's Home is a significant incident in the history of Hartford and of this community. Its very existence here—even in this yet insufficiently endowed state of its affairs—is suited to be an impressive reminder of several important facts.

One of these facts is the arrival of the community, in which such an institution as this Old People's Home is planted, at a condition of *high social development* and of *recognized stability*.

The kind of want this institution is intended to redress is eminently one which implies a quite elevated feeling in society for its cordial recognition; and implies an established and permanent condition of things for the custody and preservation of such an agency of redress. In a crude state of society such kind of want is little appreciated; and in a doubtful and unsettled state of society such an instrumentality of benefit will not be undertaken. Men do not leave money to found institutions which they do not feel sure will be protected. They desire to be confident that the foundations they establish will be safe.

When Thomas Dudley, Earl of Leicester, in 1586, founded his Hospital for twelve aged men in Warwick, England had indeed seen, very recently, troubled times. But England had shown a capacity of institutional perpetuity nevertheless to which the Earl thought he could safely trust. When Thomas Sutton, in 1611, founded his Charterhouse home in London for "eighty ancient gentlemen," England had just sustained a change of dynasty; but English



institutions were under the custody of law, and Thomas Sutton thought they could be trusted.

And Dudley and Sutton were right. Neither of their hopes have been disappointed. In Lord Leicester's pleasant home those twelve men in successive and changeful companionships have found, for near three hundred years, the shelter and protection devised for them. And for upwards of two hundred and seventy years Thomas Sutton's larger beneficence has administered to its eighty pensioners the intended benefit.

And neither of those founders could have done a better thing with their money. The benign charities they established have survived them by hundreds of years, and will survive them other hundreds yet. Nay, they could hardly have done better for themselves, had mere celebrity and remembrance been their object, than just what they did. Robert Dudley was a bad-enough fellow, and perhaps wanted to get repose to his unquiet soul by his deed of charity. But even so his three-hundred-year Hospital pleads for him as nothing else he ever did can. And we think of him with tenderness whenever we remember the long succession of those his benefaction has blessed.

The establishment of this Hartford Home for the Aged suggests a like stability of society here. Such an institution would have been an impossibility in the pioneer days of our Colony. It would have been a doubtful experiment in considerably later times. But New England and the United States have got beyond the experimental period. We are come to the time when, as far as stability can be ascribed to any human society, things are to abide. Law can be trusted to protect a benevolent institution and a mortuary bestowment. A man can endow a benefaction with the assurance that his benefaction will be administered in the true interest of it. And this confidence which is so essential to a large and far-reaching charity is signally betokened by the Institution opened here to-day. The founder of it put his bequest into it, and other benevolent men added to it, and can add to it still, in the confidence that this Home is to endure, and to carry on its beneficent work in generations to come.

Another thing the opening of this Old People's Home suggests is the *higher quality of beneficence* characteristic of an advanced state of Christian society.

Care for the poor is a necessity of any form of society. It existed in the old civilizations of antiquity in greater measures than we are sometimes wont to allow; and it undoubtedly received a tremendous enlargement in scope with the advent and extension of Christianity.

But in an unsettled and especially in a pioneer state of society, care for the poor must inevitably be destitute of much refinement in its quality. Not much respect can be had to the finer feelings of men. Little can be done but to meet the coarser and more visible wants. It must be just simple *poverty* which is thought of, and the redress offered can only be of the most meager and hardest kind.

Such an institution as this which is opened here to-day would have been impossible in the days of the early founders of this Hartford town. The fathers and mothers of those days were too strenuously occupied in hewing out a habitable place in this wilderness to spend any of their thought and means on other needs than the plainest and most imperative among their poor. They did not neglect their duty altogether. The alms-houses everywhere in our New England communities survive as memorials of a sense of obligation which has been recognized from the first. And these poor-houses—often in more than one sense “poor”—have done good. They have met an ever-present need of the comparatively hard and coarse condition of life out of which they came. They have put a not very agreeable shelter over many homeless people, and fed them with what has sustained life, if it has not done much more.

But as a community becomes more refined and more permeated by the true spirit of the Gospel, a change comes over its feelings in relation to the poor. It comes to recognize and to care for finer shades of want. It comes to provide against other necessities than those of mere lack of bread and clothes. It comes to discern that a man or woman may suffer more from friendlessness than from hunger; from a sense of loneliness and bereavement than from winter cold.

And so benevolence takes on finer phases of help, in answer to these more refined aspects of need. The insane who were once kept chained in out-houses or herded with a town's common poor, are now made the subjects of special and assiduous care in institu-

tions provided for themselves. The deaf, the blind, the orphaned have retreats and instrumentalities adjusted to their specific wants.

It is in pursuance of this same refining instinct of benevolence that the aged poor are in these times especially remembered. Society has come to feel for them, not simply as poor, but as being a *class* of her poor, who are, by reason of the facts attendant on age, peculiarly deserving of sympathy. With something of the sentiment which a mother feels toward her babe, or which a robust father feels toward some crippled child which limps toward his strong supporting arms. a really Christian benevolence turns toward the aged poor. Past life's common interests, bereaved of life's common joys, exposed to peculiar burdens and weighted down with long and sad memories, the poor who are also old have a claim on our sympathies of a peculiarly tender character. Less often, by far, because of their poverty than their age and what that age involves, they are objects toward whom a refined and Christian charity is especially called on to turn. And it is the recognition of this finer phase of human need which is witnessed to by the opening of this Old People's Home to-day.

Nor can one other suggestion of this occasion be forgotten. The establishment of this Home is a suitable reminder that ours is a state of society where the *necessity for such a refuge for aged need* is peculiarly imperative.

Men and women do indeed grow old at all times. But the chances of their becoming poor as well as old are much greater in some times than in others.

A purely agricultural community is marked by comparatively slow changes. Poverty indeed exists in such communities, but it is relatively rare and gradual of approach. But commercial and manufacturing societies are exposed to gusts of adversity which toss the most prudent and most deserving from pole to pole of temporal affairs. The best plans suddenly miscarry. The long-endavored enterprise fails. Some swift stroke of disaster appears out of what seemed the clear sky of auspicious prosperity. So frequently does this happen that we can all of us recall instance after instance of this sudden reduction of affluence to distress. We have seen, and seen many times, men who yesterday rode in their carriages, to-day plodding a weary and even a hungry way on foot.

And this liability is one to which the society of our time is peculiarly exposed. This is preëminently a commercial age.

Ours is a trading and manufacturing community. Property is mainly of the "personal" variety; liable especially to sudden and unexpected evanishment.

An institution like this Old People's Home is here peculiarly necessary. For no one can tell who next will need its succor. The wealthiest to-day may want its refuge to-morrow. It is a matter to be especially thankful for that into the vicissitudes of our changeable life is introduced, in the planting of this institution, an agency of redress for a need which is so demanded by the exigencies of the time. Long may it survive, to minister to the needs which will certainly arise. Plentifully may it be endowed, that its ministrations may be large in proportion to the need.

The closing prayer was offered by the Rev. George M. Stone, D. D., of the Asylum Avenue Baptist Church.

# OLD PEOPLE'S HOME.

---

## TERMS OF ADMISSION.

ARTICLE I. Applicants for admission to the Old People's Home must be citizens of the State of Connecticut, persons of good character not under sixty years of age, and in reduced circumstances.

ARTICLE II. The sum of not less than four dollars per week will be charged; and this sum must be prepaid or secured by a responsible person.

ARTICLE III. A probationary period of four months will be required before the applicant can be confirmed as a permanent inmate of the Home.

ARTICLE IV. Application for admission must be made to the Executive Committee, and a full statement of the circumstances of the applicant must be given.

ARTICLE V. Every person admitted as a permanent inmate shall sign and execute, in a book kept by the Superintendent, the agreement and conveyance hereto annexed.

ARTICLE VI. No article of furniture shall be brought into the Institution without the consent of the Executive Committee; such articles as shall be admitted shall be and become the absolute property of the Hospital.

ARTICLE VII. Form of agreement: The undersigned having been received as a permanent inmate and beneficiary of the Old Peoples' Home, a department of the Hartford Hospital in the City of Hartford, now in consideration of the benefits assured to me as such beneficiary and of my admission thereto, I do hereby assent to and promise compliance with the rules and regulations of such Home as they exist at the date hereof, and as the same shall be made, amended, or modified thereafter; and I do hereby sell, assign, set over,



and convey unto the Directors of the Hartford Hospital and their successors and assigns forever, all the goods, chattels, effects, and personal property of every kind, and all real estate, wheresoever the same may be situated, which I now possess or to which I shall hereafter become entitled, during my residence at the Home ; and I hereby make and appoint the Treasurer of the Hartford Hospital, and his successor and successors in office, my attorney and trustee irrevocable with full power and authority to demand, receive, collect, and recover said property, effects, and claims, for the purposes hereinbefore and hereinafter stated, to pay and deliver the same to said Home. It is also understood that I may at any time terminate my connection with the Home, and that the Executive Committee of the Hospital may in their discretion at any time require me to do the same. It is however understood that upon payment to said Hospital of such sum or sums of money as fixed by the Executive Committee, as a fair compensation for my support, and charges against me to the full extent, and for all the term in which I shall have been an inmate of said Home, then I am to receive from said Hospital such property as I have transferred to it, or the proceeds of such property as the Executive Committee may have disposed of.

## HOUSE RULES.

### ARTICLE I.—DUTIES OF MATRONS.

The Matron shall have the general care of the domestic affairs of the Home and of the inmates, subject to the direction of the Superintendent and Executive Committee. No person will be permitted to interfere or find fault with the Matron ; but if any inmate has cause for complaint, application must be made to the Executive Committee, who will receive any statement and take action thereon as they may think proper. She shall see that all inmates, who are able to do so, shall take their meals at the family table, and that proper order is preserved ; also, that suitable food shall be provided for the sick.

## ARTICLE II.—DUTIES OF INMATES.

Any inmate wishing to leave the house to visit friends or otherwise must apply to the Matron for her assent, stating where he or she intends going and when he or she expects to return. Every inmate who is able to do so will be required to keep his or her room neat and clean, and the furniture in order, and make themselves generally useful. Any inmate who shall be guilty of circulating reports injurious to the reputation of the Home, criticising and finding fault with the management, creating dissatisfaction or disturbance among its inmates, shall be admonished, and on repetition of such offense shall hereby forfeit his or her privileges and be dismissed from the Institution. It shall not be allowable for the male and female inmates to visit each others' rooms, but they may meet in the corridors, which will be always open to them.

## ARTICLE III.—VISITORS.

The friends of inmates and the public generally may visit the Home on Thursday, between the hours of 10 and 12 o'clock A. M., and from 2 to 4 o'clock P. M. At other times visitors will be admitted only by permission of the Superintendent or Matron.

## ARTICLE IV.—PHYSICIANS.

No physician except those connected with the Hospital will be allowed to attend the inmates, except by permission of the Chairman or some member of the Executive Committee.

## ARTICLE V.

No spirituous liquors shall be brought into the Home, nor shall any be used by any inmate, unless the same be prescribed by the attending physician, and placed in charge of and administered by the Matron.

## ARTICLE VI.

The lights shall be extinguished in the rooms of the inmates at nine in the evening, and in the halls and corridors

at 10 P. M., unless the Matron for good reasons direct otherwise.

#### ARTICLE VII.

Upon the death of an inmate, the Matron shall immediately notify the Executive Committee, and also the friends as far as their address may be ascertained. Should the funeral take place from the Home, the arrangements shall be uniform in all cases and shall be made under the direction of the Executive Committee. The friends of the deceased may defray the expenses, or remove the remains elsewhere for interment by permission of the Superintendent.

#### ARTICLE VIII.

Willful violation of any of these Rules or Regulations by any of the inmates shall render such person liable to dismissal, in which case he or she shall not be entitled to a return of any moneys paid by such individual; such clothing and other personal effects belonging to the person dismissed may be taken. The Executive Committee may make such dismissal. Persons expelled will not be permitted to visit the Home under any circumstances. In all matters of difference between the inmates the decision of the Superintendent shall be conclusive, until modified or reversed by the Executive Committee. The orders of the Superintendent and Matron in all matters relating to the domestic government of the family must be observed by all inmates; such orders must be reported to the Executive Committee.

#### NOTE.

A gift of \$5,000 will endow a room in perpetuity, the donor having the privilege of nominating its occupant.

A like gift of \$4,000 will create a permanent bed in the Dormitory subject to the same privilege. Owing to the want of funds, the Executive Committee will be unable to receive permanent inmates at present, except under the above conditions.

Articles I, II, and IV will regulate the admissions for the time being.

EIGHTH

ANNUAL REPORT

—OF—

The Conn. Prison Association,



HARTFORD, CONN.

1885.

# FORM OF BEQUEST

—TO—

## The Connecticut Prison Association.

---

*I give and bequeath to the Connecticut Prison Association in the City of Hartford, the sum of.....dollars, to be paid by my Executors out of my real or personal estate, as soon as the settlement of my affairs will permit, to the Treasurer of the said Association for the time being, in trust to be applied by the Executive Committee thereof to the purposes of said Association.*

---



# LIST OF OFFICERS FOR 1885.

---

## *President.*

HON. FRANCIS WAYLAND, New Haven.

## *Vice-Presidents.*

Hartford County,	VERY REV. JAMES HUGHES.
New Haven “	REV. NOAH PORTER, D. D., LL.D.
New London “	REV. E. W. BACON.
Fairfield, “	HENRY R. TOWNE, Esq.
Litchfield, “	F. RATCHFORD STARR, Esq.
Middlesex, “	HON. BENJAMIN DOUGLASS.
Windham, “	WM. C. JILSON, Esq.
Tolland, “	HON. ALFRED R. GOODRICH.

## *Treasurer.*

JOHN B. CORNING, Esq., Hartford.

## *Secretary.*

JOHN C. TAYLOR, Hartford.

## *Executive Committee.*

*Chairman*, HON. FRANCIS WAYLAND, VERY REV. JAMES HUGHES, REV. DR. NOAH PORTER, REV. E. W. BACON, HENRY R. TOWNE, ESQ., HON. BENJAMIN DOUGLASS, WILLIAM C. JILSON, ESQ., HON. ALFRED R. GOODRICH, JOHN B. CORNING, ESQ., WM. FRANKLIN, ESQ., REV. THOMAS R. PYNCHON, D. D., REV. STORRS O. SEYMOUR, JOHN D. BROWNE, ESQ., DR. THOMAS P. GIBBONS, WILLIAM A. AYRES, ESQ., JOHN G. BELDEN, ESQ., E. W. PARSONS, ESQ.

## *Committee on Finance.*

*Chairman*, JOHN B. CORNING, ESQ., Hartford; HENRY R. TOWNE, ESQ., Stamford; WILLIAM FRANKLIN, ESQ., New Haven; REV. EDWARD W. BACON, New London.

## *Committee on Crime and Laws.*

*Chairman*, DR. THOMAS P. GIBBONS, New Haven; HENRY R. TOWNE, ESQ., Stamford; VERY REV. JAMES HUGHES, Hartford.

## *Committee on Visitation and Discharges.*

*Chairman*, E. W. PARSONS, ESQ., HENRY W. TAYLOR, ESQ., JOHN D. BROWNE, ESQ., JOHN B. CORNING, ESQ., Hartford; JOHN G. BELDEN, ESQ., Wethersfield.

## *Agent.*

JOHN C. TAYLOR, Room 45, State House, Hartford, Conn.

# TREASURER'S REPORT.

JOHN B. CORNING, TREASURER, *in account with* THE  
CONNECTICUT PRISON ASSOCIATION.

## RECEIPTS.

DR.	1884.	
From State Treasurer,		\$2,000.00
“ D. R. Howe, Esq., Treasurer Watkinson Fund,		300.00
“ Subscriptions and Donations,		490.83
		<hr/>
		\$2,790.83

## EXPENDITURES.

CR.	1884.	
Paid Approved Bills for Aid of Discharged Prisoners,		1,349.50
“ Deficit 1883,		68.93
“ on account of Agent's Salary,		1,336.40
“ for printing Annual Report, 1883,.		36.00
		<hr/>
		\$2,790.83

## DEFICIT FOR 1884.

Bills Due,		\$233.73
Total expenses for year 1884,		<hr/>
		\$3,024.56

HARTFORD, CONN., February 3, 1885.

This will certify that we have examined the foregoing statement of John B. Corning, Esq., Treasurer of The Connecticut Prison Association for the year ending with December 31, 1884, compared the vouchers therewith, and find the same correct.

THOMAS I. RAYMOND, } *Auditors of*  
WILLIAM H. LAW, } *Public Accounts.*

## DONATIONS, 1884.

Estate of F. Marquand, deceased	Southport, -	\$100.00
State Comptroller, . . . . .		32.94
Mrs. H. A. Perkins, . . . . .	Hartford, .	30.00
N. M. Belden, . . . . .	Wilton, .	27.69
Cheney Brothers, . . . . .	Hartford, .	27.00
F. J. Kingsbury, . . . . .	Waterbury, .	25.00
J. S. Elton, . . . . .	" .	25.00
William E. Downes, . . . . .	Birmingham, .	25.00
Rebates, . . . . .		24.15
William Franklin, . . . . .	New Haven, .	10.00
Cash, . . . . .	" .	10.00
E. E. Salisbury, . . . . .	" .	10.00
Miss E. W. Davenport, . . . . .	" .	10.00
Mrs. J. B. Robertson, . . . . .	" .	10.00
Mrs. William Fitch, . . . . .	" .	10.00
Miss Isaphene Hillhouse, . . . . .	" .	10.00
Mrs. Thomas G. Bennett, . . . . .	" .	10.00
Very Rev. James Hughes, . . . . .	Hartford, .	10.00
Miss F. Wakeman, . . . . .	Southport, .	10.00
Miss A. E. Perry, . . . . .	" .	10.00
First Cong. Church, . . . . .	Norwich, .	9.40
Mrs. W. D. Gookin, . . . . .	Southport, .	5.00
E. W. Wells, . . . . .	Hartford, .	5.00
Miss Mary W. Wells, . . . . .	" .	5.00
Mrs. J. W. Mansfield, . . . . .	New Haven, .	5.00
E. H. Bishop, M. D., . . . . .	" .	5.00
Mrs. A. S. H. Davies, . . . . .	" .	5.00
Mrs. John F. Noyes, . . . . .	Litchfield, .	5.00
Mrs. E. W. Vanderpool, . . . . .	" .	5.00
John G. Belden, . . . . .	Wethersfield, .	5.00
Cash, . . . . .	Hartford, .	3.65

L. B. Hass,	.	.	.	.	Hartford,	.	2.00
J. C. Taylor,	.	.	.	.	"	.	1.00
Mrs. J. C. Taylor,	.	.	.	.	"	.	1.00
Miss Harriet A Judson,	.	.	.	.	Monroe,	.	1.00
Miss Hannah M. Judson,	.	.	.	.	"	.	1.00

---

\$490.83

By a clerical error the following donations were not included in Treasurer's Report as audited, but will be accounted for in report for the year, 1885 :

Mrs. Henry Farnam,	.	.	.	.	New Haven,	\$20.00
F. Deming,	.	.	.	.	Litchfield,	10.00
E. W. Parsons,	.	.	.	.	Hartford,	2.00

---

Carried over to 1885, . . . \$32.00

# REPORT OF THE SECRETARY AND AGENT.

## *Gentlemen of the Executive Committee :*

During the year ending with December 31, 1884, there have been one hundred and seventy-eight—178—prisoners discharged from the Connecticut State Prison, as follows :

By reason of expiration of term of sentence,	-	165
“ “ pardon by Board of Pardons,	-	5
“ “ “ Secretary U. S. Navy,	1	
“ “ death,	- - - - -	4
“ “ transfer to Hospital for Insane,	-	2
“ “ escape,	- - - - -	1—178

Of this number 176 were males, 2 females, - 178

The number who placed themselves in care of  
your agent are, - - - - - 168

In addition to this number there have been  
from prisons in other States, - - - - - 2

From County Jails in this State, - - - - - 3

Prisoners discharged previous to 1884, - - - - - 7

Total in care of the agent during 1884, - - - 180

These have been assisted as follows :

Employment and board while waiting work, - 97

Tickets to places of employment were furnished to these, 97 - - - - -

Clothing has been furnished to 61 - - - - -

Sent home or to friends at their own request,  
tickets furnished by agent, - - - - - 78

Necessary tools furnished, 5 - - - - -

Insane ; returned to relatives, - - - - - 1

Insane ; placed in charge of Comptroller, - 2

Insane ; returned to other States, - - - - - 2—180

Re-arrested immediately on discharge by warrant or requisition, - - - - - 2



The number of prisoners in our care during the past year have been largely in excess of the number aided by the Association during any other year of our existence.

During the year 1881 we assisted	119
“ “ “ 1882 “ “	96
“ “ “ 1883 “ “	120
“ “ “ 1884 “ “	180

During the year our expenses have exceeded our income to the amount of two hundred and thirty-three dollars and 73 cents, as shown by the report of our Treasurer.

The Standing Committee on “Visitation and Discharges,” have visited the prison at least once in each month and examined each prisoner who was to be discharged during the next month. This examination together with information furnished by the Warden and Chaplain enabled the Committee to understand the condition, circumstances and requirements of each prisoner.

The following circular is sent to each prisoner who is to be discharged. This circular is sent in advance of the visit of our committee, and thus informs the prisoner of our objects, and when visited by the committee he talks more freely about his plans and prospects than he otherwise would.

DEAR SIR :

You will soon be discharged from this prison and we, as your friends, offer you such assistance as we can give. Our object is to aid you in obtaining employment. If you have a trade and desire to work at it, we will, if possible, aid you to get work at your trade, but if this cannot be obtained, we presume, of course, that you will be glad to accept any opportunity to earn an honest living. We do not advertise you as a discharged prisoner, nor do we in any way place you at a disadvantage. We have assisted a great many persons as they left this prison; many are now doing well, respected, happy and prosperous. On the contrary some have gone down, and returned to prison, simply because they would not be sober and industrious. A man that will totally abstain from the use of

liquors or beer. keep away from bar-rooms and disreputable places, and be industrious and honest, will surely succeed; a man that will not do this, need not expect to be permanently successful.

We will call and see you before you are discharged and if you have any plans or arrangements for your future, and desire our assistance, we will talk it over with you and see if we can aid you. It is not our purpose to give you money. As before stated our object is to assist you to get work, or to reach your friends or home if you desire to do so. Be ready to tell us, when we call to see you, just how you think we can best assist you.

*Committee on Visitation and Discharges.*

Acting by direction of this committee, I have met each prisoner on the morning of his discharge in the office of the Warden, and assisted him as his circumstances required.

Some of those who are assisted by the Association prove by their industry and correct lives to be worthy of the confidence placed in them. Others disappoint us, and drift back to criminal ways and are returned to prison. It is my belief that nine-tenths of all who are discharged from prison resolve that they will lead honest lives, but, I regret to say, no such percentage as this succeed in living up to their good resolutions. Probably not one half of those who are discharged are reformed, but of all those who avail themselves of our assistance enough are reformed to prove that the work of this Association is well worth doing, and in every sense pays; although the financial side is not by any means the most important, it can be readily seen that each man reformed is worth more in dollars and cents than the total amount expended by this Association during the year. Prevention is better and cheaper than cure, and more may be accomplished with the same amount of money and labor in the work of preventing children from growing into criminals by improving their conditions, and the influences under which they live; some of the young men who come into our prisons are no more responsible for being what they are, than they are for having been born, and the work of

preventing children from becoming criminals is both more important and more hopeful than the work of reforming criminals, but the work of reforming criminals is of sufficient importance and sufficiently encouraging to enlist the co-operation of good people everywhere. My correspondence with discharged prisoners, with their parents and families, and with their employers furnishes good evidence of the value of the work accomplished by this Association. I will submit a few extracts from some of the letters received by me during the year.

#### A young man writes as follows :

DEAR SIR :—In compliance with your request, I write to say that I arrived here on Monday evening, and started to work the following morning. I have been very kindly received and have not met with anything unpleasant on account of my past history. Please tell Chaplain Howard that I will write to him in a few days. I am not able to make full wages yet as it is several years since I have worked at my trade, but I earn sufficient for my present wants. With thanks for your kindness to me, I remain gratefully      Yours Respectfully,

---

#### An employer writes :

MY DEAR SIR : I am sorry that I cannot attend your annual meeting next Wednesday, but I am so engaged that I cannot come. The young man you sent last is doing well. Unfortunately the shoe business is very dull, but he is doing well, and has proved worthy of the help you have given him. I have faith that he will continue in the good way.  
Very truly yours,

---

A young man who had been induced to break away from a companion that led him into prison once, and would have done again if he had continued with him, writes as follows :

FRIEND MR. TAYLOR :—I received your letter and was glad to get it. We started housekeeping last week and I think we can live much cheaper than boarding. I have as good a wife as any man could wish for, and I mean to be a good husband. My work has not been steady, but no matter how little money I have she thanks God for it, and I can now say it is true happiness to lead an honest life, and I trust in God to keep me. I can see my past folly like a big black spot that I cannot forget, and I like to think of it for it helps to enable me to condemn my former wickedness. Even to-night a young man that works with me asked me to meet him after supper to have a good time. I told him what happened before, and then he went away to his home and I to mine, and I have scored another victory, and I know it was mostly bad company that brought me to drink, gamble, and steal, and I shall do all I can to keep young men from these vices. Please write me again and I will answer it.

Yours most sincerely,

---

The above was written nearly a year ago, and the young man still continues industrious and honest. There is no doubt but that he is permanently reformed, and yet he was on the direct road to become a professional thief, owing to an attachment he had formed for the companion above mentioned, who was an old criminal, and who seemed to exercise almost a mesmeric influence over this young man. This companion has lately been convicted in Illinois, and is now serving a ten year's sentence in the Joliet prison.

Another writes :

DEAR FRIEND :—I am well pleased with this place, and if I can have work enough to pay my board through the winter I am sure I can make good headway before another winter. I am going to follow your advice about saving my money. Every time I get a dollar more than is required to pay board I shall put in the savings bank. If I only had the money I wasted in years past I could commence a little shop for myself now. I wish I could make every young man who is going the way I went see what a big fool he is. I thought it was smart to drink more than any one else, and such kind of foolishness, but I have got my eyes open now and you never will see me in any such business again. I am very thankful

for the assistance and advice you gave me when I left Wethersfield, and I mean to show you that I appreciate it.

Very Respectfully,

---

During this year we have had, as in the past years, the valuable assistance of the Warden, Deputy Warden and Chaplain of the State Prison, and their ready co-operation with us has done much to insure whatever success has resulted from our work.

Respectfully,

JOHN C. TAYLOR,

SECRETARY AND AGENT.



DEDICATION  
OF THE  
STATUE OF GOVERNOR BUCKINGHAM,  
ADDRESSES, ETC.

---

REPORTS  
OF THE  
Legislative Commission, and to that Commission  
ON THE  
PROCEEDINGS,

→\*JUNE + 18, + 1884.\*←

---

*PRINTED BY ORDER OF THE GENERAL ASSEMBLY OF 1885.*

---

HARTFORD, CONN.:  
PRESS OF THE CASE, LOCKWOOD & BRAINARD COMPANY.  
1885.



*To the General Assembly :*

The Joint Select Committee of one Senator and eight Representatives, raised by the last General Assembly to take into consideration all matters relating to the statue of Governor Buckingham—which Committee was afterwards created a Commission to carry into effect the necessary and proper ceremonies suitable to the occasion of its inauguration—beg leave to report :

That in the discharge of the duties assigned them, the eighteenth day of June, A.D. 1884, was designated for the public unveiling of the statue. The ceremonies on that day in the battle-flag vestibule of the State House were as follows : viz., Prayer by Rev. Daniel Merriman, D.D., of Worcester, Mass., who was pastor of the church with which Governor Buckingham was connected at the time of his decease ; Hon. Henry B. Harrison, of the Commission on the procurement of the statue, made the address of presentation ; the statue was unveiled and received on behalf of the State by His Excellency Governor Waller ; after which an oration was delivered by Hon. Orville H. Platt, from a platform constructed at the north entrance to the Capitol ; the Benediction was pronounced by Rev. George W. Smith, D.D., President of Trinity College.

A copy of the addresses on that occasion is herewith submitted ; also the official records of the Commission, the report of Major John C. Kinney, Grand Marshal of the day, and the report of the Secretary of the Commission.

Gov. Waller and his staff, mounted, headed the procession of invited guests in carriages ; among whom were : Lieut.-Gov. Sumner and the State officers ; the ex-Governors of the State ; the surviving State officers of the war period ; the Senators from Connecticut in the Congress of the United States ; the military staff of Gov. Buckingham ; Judges of

the Supreme and the Superior Courts ; Brig.-Gen. S. R. Smith, C. N. G., and staff ; military and naval guests ; the Mayor of Hartford, with the Mayors of other cities of the State ; President Porter of Yale College, Rev. S. G. Buckingham, D.D., the brother, and other surviving relatives of Gov. Buckingham.

Also in the procession were the members of the Gov. Buckingham Statue Commission, and of the Commission on the unveiling exercises, accompanied by the Sculptor, Olin L. Warner.

Special invitations to the ceremonies were extended to the Chief-Justice of the Supreme Court of the United States ; to the President, the Secretary of War, the members of Congress from this State, and the members of the last General Assembly.

Buckingham having been the War Governor of the State during the entire period of the Rebellion, it was manifestly the intent of the General Assembly to afford the soldiers and sailors of the war an opportunity to honor the memory of their Commander-in-Chief by their presence, and to make that presence a distinguishing feature of the occasion.

Steps were therefore taken to ensure their participation in the parade (of whom about 7,500 were in line), and to provide refreshment for them in Hartford. The latter was most satisfactorily accomplished through an arrangement with a Committee of its citizens, of which Hon. Morgan G. Bulkeley, the Mayor of the city, was Chairman.

Reduced rates of fare were also accorded by the railroad companies.

The Quartermaster-General, by your authority, furnished tents for the headquarters of the veteran Regimental Associations of the State, and such other tents as were required. He also furnished the customary salute.

All other military organizations presenting themselves in uniform were invited to participate in the parade without expense to the State. Those availing themselves of the invitation did so in the capacity of military escorts to the veterans.

They were, the First Company Governor's Foot Guards, the First Regiment C. N. G., the Veteran City Guards, and the Asylum Hill Cadets. Also the distinguished Seventh Regiment National Guards, S. N. Y., whose presence in the parade, and the courtesies extended to them by their military friends in Hartford and the city authorities, are entitled to the recognition and thanks of this Commission.

The Commission desire to express their acknowledgments to Major Kinney, the Grand Marshal of the day, for laborious service and hearty coöperation in so many matters needful to make the occasion, and especially the parade, a success; also to his General Staff, his Aids and the Assistant Marshals, and to the Army and Navy Club, and the "Grand Army."

The duties devolving upon Capt. William Dibble and Mr. H. A. Cooley, the Superintendent and Assistant Superintendent of the State Capitol, were efficiently and satisfactorily performed.

The sum of \$6,000.00 was appropriated by the General Assembly for carrying out the purposes of the Commission on the Statue Ceremonies, of which \$5,740.01 was expended as shown by the accompanying statement of the Auditing Committee.

An unexpended balance of \$259.99 has been covered back into the Treasury of the State.

All of which is respectfully submitted.

JOHN ALLEN, *Senate Chairman.*  
 SAMUEL B. HORNE, *House Chairman.*  
 WM. H. NOBLE,  
 J. S. LATHROP,  
 JAS. W. SPELMAN,  
 GEORGE F. SPENCER,  
 THOMAS B. WALKER,  
 JAS. R. AYRES,  
 E. BURROWS BROWN.

HARTFORD, February 10, 1885.



## ADDRESSES.

---

Address of the Chairman of the Commission on the Unveiling Ceremonies, **Hon. JOHN ALLEN.**

### *Men and Women of Connecticut:*

You have assembled in testimony of your regard for the illustrious Patriot, Statesman, and Christian, chosen to be the supreme executive of the people of this State, and voice their will, during a period, in which their "lives, and fortunes, and sacred honor" were at stake, in the greatest struggle for free government the world has witnessed. In the presence of these battle-flags, and the survivors of those who bore them to victory, you have come to dedicate a statue, erected, in love and gratitude, to the memory of William A. Buckingham.

As he looked to the Source of all strength for guidance, it is fitting to this occasion that his pastor for many years, the Rev. Dr. Merriman, commence the exercises with prayer.

It is my privilege to present to you Dr. Merriman.

### **Prayer by Rev. DANIEL MERRIMAN, D.D.**

O Lord God of Hosts, who art from everlasting to everlasting, we are pilgrims and strangers before Thee as all our fathers were. Our days upon the earth are as a shadow, and there is none abiding; but Thou art the same, and Thy years fail not, and those that put their trust in Thee shall never be moved.

O eternal God, as we gather here to perpetuate the memory of Thy servant whom Thou didst raise up and ordain to be, by his courage and faith in Thee, the leader of this people during the storm of war, we invoke Thy blessing upon us,—upon the governor, counselors, magistrates, judges, and all

the people of this ancient commonwealth ; upon this company here present ; and especially upon the veteran soldiers and sailors of the Republic, and upon their families.

O our Father, as we recall their sacrifices, and the deliverance wrought for us by Thy hand, our hearts are full of deep gratitude. Thee we acknowledge as the giver of good men ; as the source of all wisdom in the council chamber, all valor in battle, all prosperity and peace at the fireside.

We thank Thee for the good examples of heroic men, and for the priceless inheritance of liberty, guarded by law, which we have received from their hands. More especially do we praise Thy great and Holy Name for the wisdom, devotion, patriotism, trust in Thee, and gentle chivalry of the man whose memorial we here to-day set up.

O God of our fathers, who hast promised to be a God unto Thy people and to their children after them, and who art the Inspirer of all high characters and noble deeds, long after we who knew and loved him shall have passed away, and when generations yet unborn shall tread these courts and gaze upon these scenes, may his face, and the story of his life, kindle in them like patriotism and faith in Thee, to the end that government of the people, by the people, for the people, may not perish from the earth.

O God, bless our beloved country, and her rulers, and may we be that happy people whose God is the Lord.

And the praise shall be given to God the Father, the Son, and Holy Ghost, one Triune Jehovah, forever. Amen.

Address of Presentation of Hon. **HENRY B. HARRISON**, of the Committee on the Procurement of the Statue.

*Your Excellency:* To you, as the governor and official representative of the State, the commissioners, who were directed by the General Assembly to procure and cause to be placed in the battle-flag vestibule of the Capitol a statue of Governor Buckingham, have the honor to announce that they have discharged the duty which was thus imposed upon them.

The statue is here. It is covered by the flag of the State and the flag of the Nation entwined together. The hour has

come for you to lift them and reveal to us the noble figure of your great predecessor.

There was an illustrious Greek who declared that he had no accomplishments or graces, but that he knew how to make a small State great.

He whom to-day we honor was himself great, because he, too, knew how to make a small State great. If the greatness of the State was not made by him, it was by him enhanced and exalted.

He was the chief of a State then containing less than four hundred and seventy thousand people. But he knew how, in the dread days of war, so to inspire and so to stimulate this little commonwealth as to make her send forth to battle and wounds and death on distant fields, for the sake of a righteous cause, more than fifty-three thousand of her sons;—more than one-third, almost one-half, of all the able-bodied men within her borders fit to bear arms.

Perhaps, in his modesty, he did not know that he was great. We ourselves, who did know it, knew not how great he was until death and time, revealers of the truth, enabled us to take the just measure of his grand character and his lofty spirit.

This imposing demonstration is the unerring witness to his greatness. From every hill, from every valley, from every city, and from every hamlet in the State,—from many States and from distant States,—the scarred veterans of the holy war have gathered together here, moved by one spontaneous, magnetic, and irresistible impulse, to associate with this ceremonial the memories of their patriotism, their sacrifices, and their valor. With the soldiers of the land have come the warriors of the sea. And with the soldiers of the land and the warriors of the sea, a vast multitude of men, of all conditions, of all temperaments, of all beliefs, and of all passions, have come up hither with one accord and in unity of spirit as to a high solemnity.

What means this mighty movement? What means this universal and overpowering impulse?

It is the mystery—the old and eternal mystery—of the

power of a noble and royal spirit, a noble and heroic life, over the hearts and lives of men. Such manifestations express the absolute sentiments of mankind—those sentiments which lie in the deep places of the heart—those sentiments which are the very life, the very reality and force of the human soul—those sentiments, which by a divine instinct, always seek and find their true object—those sentiments which only the living truth of things can kindle into blaze.

He was great because he was a true type of the best characteristics of the race which founded and peopled Connecticut. By his physical pedigree, by his intellectual pedigree, and by his moral pedigree, he was one of that strong race in body, mind, and soul; and in him its superb traits reached their highest point of development.

His sagacity was unerring; his courage dauntless; his will inflexible; his devotion to duty supreme; his faith in God absolute.

Like the race from which he sprung, he loved peace; but, like that race, he feared not war.

This little people, which in its infancy confronted, and with quick, terrific blows, smote and annihilated the savage enemies that swarmed around its cradle,—this little people that in its feeble youth sent out its little armies, in numbers excessively out of proportion to its strength, to fight, beyond its frontiers, the battles of its king; this little people that lavished its blood to the point of exhaustion in fighting out the War of Independence; this little people that in the War for the Union sprang to its arms at the first sound of the bugle, and from the beginning to the end of the contest answered, with instant response, every call of Lincoln, and every call of Buckingham, and more than answered them—always filling its quota, and more than filling it; this little people, always peaceful in peace but always warlike in war;—he was bone of their bone, flesh of their flesh, the type, the ideal, the consummation and the flower of the high qualities which have made this little people great and its history glorious.



The sculptor, himself a son of Connecticut, in whose veins runs the same blood that warmed the heart of one of her early heroes, has approached with affectionate reverence the work which was committed to his hands. He was equal to the work. With the finger of genius he has touched the bronze and wakened it to life immortal. Remove, sir, the veil, and disclose to us the grave face and majestic form of the War Governor.

Let us behold him in the midst of the surroundings which best befit him.

This stately capitol, with all wealth of marble and of granite and of decoration, is henceforth to be his appropriate resting-place. This vestibule, consecrated already by these tattered flags which his right hand delivered to the brave men whom he sent forth to battle and his right hand received from them when they came back victorious, will be made more sacred forever by his august presence.

At the close of the address the statue was uncovered by Governor Waller, who made the address of reception, as follows:

#### GOVERNOR WALLER'S ADDRESS.

The honorable duty, sir, assigned to the commission of which you are chairman, and for which you have so eloquently spoken, has been discharged with eminent fidelity and judgment.

The noble statue, unveiled with so many expressions of a commonwealth's regard and a people's affection, is accepted in the name of the State, and dedicated to the memory of him it is designed to perpetuate and honor.

The genius of the sculptor has given to us and secured to posterity in this majestic bronze, a faithful, impressive likeness and presentment of Connecticut's War Governor. Its contemplation satisfies us. It recalls to the minds and hearts of those who have seen him in the vigor of his public life, in the places of honor to which official duty and courtesy called him,—in the executive chamber, in the Senate of the nation, in the camp of the soldier, or in the inaugural parade



and procession as commander-in-chief,—that open, kindly face, and dignified, manly form our eyes loved to look upon. It does more! Its contemplation is exalting. Standing in its solemn presence our hearts are brought into communion with the lofty spirit of him who revered in public, as in private life, “his conscience as his king.”

The stately figures in marble and bronze, of Trumbull and Buckingham, the War Governors of Connecticut in the Revolution and the Rebellion, now adorn this magnificent building, and the places they occupy are of historic import. The statue of Trumbull, who took such a conspicuous part in the formation of this Government, stands where in honor it should, at the very portals of the Capitol of this commonwealth. The statue of Buckingham is appropriately here. Its position in this part of the Capitol, in which are placed the sad but honored trophies of our State in the War of the Rebellion, adds to its memorial significance, and these worn and blood-stained battle-flags, standing like so many sentinels of honor to guard it, add to its glory.

Connecticut never rendered more fitting honors than those of to-day, to either civilian or soldier, living or dead. And these honors are enhanced by the presence of that gallant regiment of citizen soldiers, who come representing in this day's celebration the metropolitan city of our country, and the Empire State of our Union.

Let us, fellow-citizens, on this memorable day, at the base of this statue, as at the foot of an altar, consecrate ourselves anew to that loyalty and devotion to our State and our country, that animated the life of him whose effigy we are beholding, and whose memory we revere.

After the unveiling, the orator of the day, Hon. Orville H. Platt, U. S. Senator, spoke as follows from a platform at the north entrance of the Capitol:

## SENATOR PLATT'S ORATION.

*Veteran Soldiers and Fellow-Citizens:*

For every occasion God provides a man. Connecticut's share in the War for the Union was an occasion, and the man was William A. Buckingham.

For three-fourths of a century prior to 1861 the people of our State had been passing their days in peaceful pursuits. No great crisis had invoked their moral heroism since the time of the Revolution; neither the War of 1812 nor the Mexican War had deeply stirred them. The martial deeds in which they gloried belonged to the struggle for independence. The heroes whom they revered were the soldiers of 1776. Through two generations the energies of its citizens had been spent in the improvement of education, in the development of its resources, and the maintenance of its social system. Of the State it might with emphasis be said, "Her ways were ways of pleasantness, and all her paths were peace." War was a matter of history; that strife and bloodshed should ever again disturb its quiet life seemed incredible. In these days, with memories of great battles, of great victories, and terrible losses still fresh in our minds, it is impossible to realize the sense of peaceful security which had so long pervaded the State. When, on the very eve of armed rebellion, men began to say that war was inevitable, the prediction only excited an incredulous smile.

But the men of Connecticut had a noble parentage. Its history, culminating in constitutional government and complete independence, had been one prolonged struggle for personal freedom and civil liberty. The Charter Oak was a "sacred tree;" the exploits of the Sons of Liberty a cherished memory. The heroism and sacrifice of its founders and defenders had entered into the character of the quiet and sedate men of 1860, and the ancestral blood in their veins needed but the occasion to pulsate with the fiery throb of patriotism. Through all those peaceful years men had retained the great triune love of their fathers,—love of Right, of Freedom, and of God. It was said of them that the heroic

spirit was dead,—that they had become shop-keepers, “dough-faces,” cowards. Those who slandered them forgot that the men from whose loins they sprung knew no fear but the fear of God.

Such were the people of Connecticut when called to meet the great issue forced upon them by the slaveholding States. Loving freedom with an intense love, they abhorred slavery with an equally intense hatred. So long as it was confined to the States where it had existed, they believed it to be beyond reach, and themselves beyond responsibility. From its establishment Connecticut had been very jealous of its rights as a free and independent State; it limited its claim to complete sovereignty only by the powers which by the Constitution had been expressly delegated to Congress. Whatever of independence and sovereignty her citizens claimed for Connecticut they freely conceded to every State; and so, though pained and shamed that in a boasted land of freedom men were fettered and scourged and bought and sold, they saw no remedy. Some of the more intense spirits appealed to the higher law which bade them strike a blow for freedom wherever man was wronged and oppressed; but the great mass of the people admitted with regret that the States in which slavery existed must be allowed to maintain and regulate it without interference; the public conscience was satisfied with earnest moral protest. But slavery, growing arrogant, demanded the right to invade the common territory of the people, and hunt its fugitives on Connecticut soil. Long repressed by what they deemed a constitutional obligation not to interfere with slavery in the States, they leaped with a great bound into the conflict for free territories, and for personal liberty within our borders.

From 1856 to 1860 the agitation increased; the path of duty became plain and luminous. Liberty, law, human rights, became very present realities. Men acted from conviction with very little thought of consequences. The political campaign of 1856, with its stirring watchwords, “Free soil, free speech, free men,” aroused a marvelous moral enthusiasm. Other controversies over which there had been

division were largely forgotten. The two burning questions of the hour were, Should the blight and wrong of slavery be fastened on the common territory of the United States? Should slaves be hunted and captured in Connecticut? Our citizens met the slave-master on the border line of Kansas; our Legislature affirmed the right of the State to guarantee freedom within its jurisdiction by the passage of a "personal liberty bill;" men began to speak of the "Spirit of '76," and of the flag which Putnam unfurled at Bunker Hill, bearing the legend, "An appeal to Heaven." Political action came to be measured only by considerations of right and wrong—whatever was right was to be adhered to without reference to expediency; whatever was wrong was to be condemned regardless of results.

So the State approached its election in the spring of 1860. No such political contest was ever fought in Connecticut. Threats of secession, of armed resistance to Government authority, were already heard. The struggle here was to give character to the national contest in November. The election was national in its issues, its importance, its results. It was not free from personal bitterness, and it was understood to determine where Connecticut was to stand in a conflict, the end of which could not be foreseen—a conflict never equaled in moral grandeur and mighty results. By a meager majority, in an election which brought every voter to the polls, the opponents of slavery extension triumphed. But though meager it was a decisive majority. From that stormy first Monday of April, 1860, Connecticut took no backward step; its every movement was an advance under the banner of equal rights for all. The presidential election of November was, so far as Connecticut was concerned, determined in advance. Calm and unmoved she listened, during the hot summer months and the beautiful autumn season that followed, to the threats of disunion. Her farmers tilled the fields and gathered the bounteous crops; her artisans and mechanics kept the busy wheels of production in motion; and in November, with less excitement but with greater emphasis,



her voters registered her already expressed verdict, that freedom was national and slavery sectional.

The five years preceding the election of Abraham Lincoln had been years of rapid moral growth. Principle and faith had come to be the motives of political action; men had become terribly in earnest, great in purpose, heroic in action. The old love of civil liberty, the old devotion to free government, which for years seemed to exist only as cherished reminiscences, became all at once vital principles, controlling the public life. There had been a new birth of liberty, and men looked into the eye of the future without a tremor.

Closely following the election of Lincoln came in rapid sequence the secession of seven States; the rebellious seizure of ships, forts, arsenals, and munitions of war; the defection in the Army and Navy; the withdrawal of Senators and Representatives; the provisional Confederation; the demand for the surrender of Fort Moultrie; the removal of Anderson to Fort Sumter; its siege; the erection of rebel batteries for its reduction; the firing on the *Star of the West* in its attempt to provision Sumter; negotiations for compromise, and peaceful dissolution. All this in four short months, and not a single act done by the Government to assert its authority. Rebellion was accomplished. The Government seemed at its mercy. How the patriotic people of Connecticut chafed at the supineness of the Executive! How dark and gloomy was the outlook!

In March, 1861, President Lincoln, in spite of the plot for his assassination, was inaugurated. When on the historic eastern portico of the National Capitol, protected by loyal soldiers, he swore to preserve, protect, and defend the Constitution of the United States, a change came over national affairs. A little light glimmered in the darkness. His inaugural address, now so famous for its spirit of conciliation and its steadfast purpose to preserve the Union, brought hope to weary, waiting hearts in Connecticut. What a wonderful pathos there was in Lincoln's appeal to the rebels to return to their allegiance! I think there is nothing like it in history. Let me recite it:



"In your hands, my dissatisfied fellow-countrymen, and not in mine, is the momentous issue of civil war. The Government will not assail you; you can have no conflict without being yourselves the aggressors. You have no oath registered in heaven to destroy the Government, while I shall have the most solemn one to preserve, protect, and defend it. I am loath to close. We are not enemies, but friends; we must not be enemies. Though passion may have strained, it must not break our bonds of affection."

The marvelous appeal was unheeded. The Rebellion gathered strength daily.

In April, 1861, in the very darkest hour of our history,—darker, and, seemingly, more hopeless than when our armies subsequently met with reverses in the field,—the people of the State again recorded at the polls their determination to preserve the imperiled nation. The question then squarely made, and as squarely met, was, whether the Government might use force, might "coerce" a seceding State? Connecticut, by its vote, answered Yes.

Very strange it seems to us now that, although seven States had declared themselves to be no longer in the Union, had set up a hostile government, and were making preparation for offensive war, a large portion of our people did not believe that a conflict of arms was really imminent. They had been so long accustomed to the pursuits and pleasures of peaceful life that it was impossible to realize that a prolonged and deadly war was impending. Largely this feeling came from the willingness of our people to concede to the seceding States all rights and privileges guaranteed them by the Constitution, and a belief that sooner or later they would listen to reason and resume their places in the Union. They could not believe that the rebels would commence actual hostilities. Thus, as the weeks rolled on, they patiently waited the returning allegiance of the South. Anxious days were those,—waiting, and hoping, and conciliating in vain. All eyes were fixed on Sumter and its little garrison. Nearer and nearer the rebels planted their batteries, and still no response from the fort. Would Sumter be re-enforced? Would its garrison

be starved into surrender? Would the rebels be mad enough to attack it? What tension of expectancy in all hearts! "Whom the gods would destroy they first make mad." The cannon which sounded the roll-call to duty was fired by rebels upon a United States fort manned by United States soldiers, over whom waved the United States flag.

The supreme hour had struck; the sound of rebel guns in a far-off State smote upon the ears of the loyal men of Connecticut and stimulated them to sublime action.

Fifty-seven years before this event, in the quiet town of Lebanon, far-famed for its natural beauty and the long line of its noted and noble men, William A. Buckingham was born. Who could have foreseen—as his early youth was developed and his character molded by the influences of the little hill-town in Eastern Connecticut—that he was destined, under the guiding hand of Providence, to lead the good State, in the time of its greatest trial, along the path of its loftiest endeavor? How little we see of the highway of the Lord from its entrance-gate! A Puritan ancestry, gentle and godly training amid scenes of rural loveliness, the inspiration of patriotic history, the earnest, though limited, education of the village school and academy, constituted the foundation on which was builded the character of our "War Governor," whose memory all Connecticut to-day unites to honor. A well-developed, symmetrical character it was,—so full, so rounded out, that even after the lapse of many years one can scarcely say in what he was specially strong, in what his greatness specially consisted, or what it was that specially endeared him to the people. He garnered physical strength and endurance by labor on the farm; he acquired a knowledge of business in a merchant's store; he expanded and enlarged his knowledge of affairs in the more widely-extended business of a manufacturer. He imbibed a rigid morality from the example and precept of a just and upright father. He inherited benevolence and kindness from a generous and loving mother. Genuine obedience and simple trust were wrought into his nature by Christian teaching; earnest, unwavering devotion to duty came with his early submission to

the will of an infinite Master. Emphatically, he was a man "Diligent in business, fervent in spirit, serving the Lord."

Horace Bushnell's estimate of Trumbull, the War Governor of the Revolution, fits equally the character of Buckingham: "He was one of those patient, true-minded men, who hold an even hand of authority in stormy times and suffer nothing to fall out of place either by excess or defect of service."

The man thus trained in the school of Providence to become the representative of the thought and purpose of Connecticut, was first elected Governor in 1858. Re-elected annually thereafter, he had, before the breaking out of the war, thoroughly acquainted himself with the State and its citizens, and secured in an unusual degree the respect and confidence of all its people. To know him was to admire and love him. He had foreseen more clearly than others the coming struggle. He had earnestly appealed to the Legislature and the people to put the militia on an effective footing. On the 17th of January, 1861, by proclamation, he urged the militia companies to fill their ranks, perfect themselves in drill, "and be ready to render such service as any exigency may demand;" and without authority he purchased equipments for five thousand soldiers. Nevertheless, the crisis found the State unprepared for war. Its only preparation had been in the hearts of its sons,—they were ready.

History tells us of occasions when, long centuries having rolled by, the whole world, in the hush of expectation, waits for the happening of an event which shall uplift humanity and open new highways for the march of freedom and faith. So waited the world for the firing of the first gun at Sumter. Connecticut was stirred to its depths; no eloquence may describe, no words portray, the great uprising. Till that grand hour men never knew themselves; such abnegation, such patriotic fervor, comes to a people but once in the long ages; but when it does come, the world sees how grandly humanity takes on the Divine. We look back to that crucial day, and see now, with clear eyes, what we then dimly saw, that it was, in very truth, God's own muster of His host. Sumter was assailed on Friday. Sunday will forever be

known in the history of the State as "Battle Sunday." Men all unused to prayer and service felt then, for the first time, the glow of a holy consecration. Men, till then careless of obligation, were baptized with the spirit of duty; men, who had lived for ease and pleasure, courted and welcomed a life of hardship and suffering; men, of gentle lives and dainty thoughts, grew, in an hour, into the stern, heroic soldiers of the Union; wealth lost its charms; death lost its sting; love blossomed into self-denial; all distinctions were broken down; political animosities were forgotten; men met and embraced each other on the common ground of a great purpose. We called it patriotism; it was more than that,—it was man's answer to the voice of the Almighty.

The sentiment of the people struggled to find fitting expression; it was voiced at last in the opening sentence of that grandest of later poems, the "Battle Hymn of the Republic," commencing:

Mine eyes have seen the glory of the coming of the Lord.

It was more than a sentiment; it was a Divine afflatus which filled the soldiers, who chanted as they marched:

In the beauty of the lilies Christ was born across the sea,  
With a glory in His bosom which transfigures you and me;  
As He died to make men holy, let us die to make men free,  
While God is marching on.

Words acquired new meanings. Loyalty and disloyalty were on every tongue, and marked the wide difference between a patriot and a rebel. The flag of the Union grew bright, and starry, and holy. Men, never suspected of music in their souls, sang the chorus:

Then conquer we must, when our cause it is just,  
And this be our motto, "In God is our trust;"  
And the star-spangled banner in triumph shall wave  
O'er the land of the free and the home of the brave.

The tri-vine flag of Connecticut, bearing its motto of living faith, was displayed side by side with the national emblem, proclaiming then, as when they now drape in unison the statue of Buckingham, that allegiance to State and allegiance to country are one, and each is but allegiance to God.



To lead and direct a people thus inspired, William A. Buckingham was specially chosen. In his faultless character, one quality stood out strikingly—it was his sublime religious faith. It pervaded and energized the whole man. I know that the fervor of those days seems to have passed, so much so, indeed, that it may seem inappropriate to dwell on this controlling element in Buckingham's character; but truth and justice demand it. Like Washington at Valley Forge, he met the crisis with prayer, and from the beginning to the end of the trial went forward with a calm bearing born of the undoubting faith that he was but an instrument in the hand of the Lord God Almighty to do His will, to preserve His chosen nation, to set His people free. Who shall deny, even in this skeptical day, that faith alone makes man truly great? It made Buckingham great; and we shall do but partial justice to his memory, or his ability, if we do not recognize and honor this noblest, grandest quality of the man. As I recall his bearing in those years of peril, I cannot but feel that he combined in character the stern justice of Israel's judge and the rapt spirit of the Hebrew prophet. His God, during the war, was the God of the Old Testament. He served Jehovah, the Man of War. The army of the Union was the army of the Lord.

Scarcely had the electric flash written on our hearts the reality of war begun, when it sounded Lincoln's call for seventy-five thousand men "to repossess the forts, places, and property, which had been seized from the Union;" "to maintain the honor, integrity, and existence of our national Union, and the perpetuity of popular government, and redress wrongs long-enough endured." The share of Connecticut in the requisition was a single regiment; but in Buckingham's mind her share in the conflict was not to be limited by the requirement of the President. Our quiet, peaceful experience had made our militia ludicrous and our military laws obsolete. We had no troops ready for the field, and no law by which they could be sent out of the State. On the day succeeding the President's call, Governor Buckingham made an appeal to the people of the State for volunteers, unlimited



as to numbers. You, to whom I speak, know how that appeal was answered. In four days, an organized regiment was in camp. On May 1st, when the Legislature met, forty companies had been accepted; a week later, and fifty-four companies in all had tendered their services to the Governor in answer to the President's call for a single regiment.

I need not in this presence recall the incidents which attended volunteering. I need not speak of the never-fading glory of those days. We may forget many things, but the supreme moment of life is forgotten never; and it needs no words of description, or eulogy, to preserve forever bright in your memory, and in the memory of a grateful people, the transcendent fervor and unselfish devotion of that hour.

Governor Buckingham's message in May, 1861, has become a part of our treasured history. It was characteristic of the man—calm, dignified, firm, direct, strong. In its every line we may read to-day the purpose and faith not only of its author but of the people to whom it was addressed. I quote but a sentence:

“The scepter of authority must be upheld and allegiance secured. It is no time to make concessions to rebels or parley with men in arms. We must make no sacrifice of principles vital to freedom and no indecent haste for conciliation and peace. ‘God makes haste slowly.’ Fail, or falter, we shall not. . . . Entering on the desperate struggle before us, let us rest assured that we fight not this battle alone. . . . The sympathies, the benedictions, the prayers of the civilized world are with us; and God Himself is with us. Let us, then, register in heaven our vows that, in firm reliance on Him, and on the righteousness of our cause, we will, if need be, make the battle-fields of this second war of independence altars of patriotic sacrifice and watch-words of liberty forever.”

I may not dwell in detail on the four long, sad years of bitter strife that followed. I must repress the desire to recall the heroic achievements of the sons of Connecticut on the glorified battle-fields of the Union. In victory, in defeat, in camp, in prison, in life, and in holy death, they were true to

their State, their Country, to Freedom, and to God. I weave no chaplet of laurel for those who survive, for their fellow-citizens have crowned them with their reverence. I lay no flower garlands on the graves of the slain, for we cherish in our heart of hearts to-day, and forever, the men who died to save our country.

Our present duty is to set forth the love and reverence borne by a grateful State for the man who, by his position, represented and embodied the purpose, devotion, and valor of all. Through the varying fortunes of the conflict he was the same active, faithful, uncompromising patriot. The people of the State acknowledged him as their lawful head, listened to his advice with profound respect, obeyed his orders with a perfect obedience, reposed in him a loyal confidence, and learned to love him with a rare love. No other man but Trumbull ever so illustrated the rich meaning of the word we have chosen to designate our chief magistrate—he was most truly and emphatically our Governor. The duties of his office were arduous and trying; but he never seemed to feel weariness. He was never content with the formal discharge of official duty. He was the foremost citizen, as well as the elected ruler of the State, and his great heart gave character to his public acts. At the outset he pledged his private fortune for the equipment and arming of the troops. Whatever money could procure for their comfort and enjoyment, beyond the things authorized by the State, he supplied at his own expense. The sum of his benefaction will never be told. Benevolent by nature, his Christian experience taught him that he was God's steward and almoner, and he gave as he believed God's Spirit prompted him. His gifts gladdened many a soldier in distress. To a citizen of Connecticut, whose duties kept him much at the front, he said: "You will see a good many battles, and much suffering; but don't let any Connecticut man suffer for want of anything that can be done for him. If it costs money, draw \*on me for it." When the news of our victory at Gettysburg reached him, he answered by telegraph: "Take good care of

the Connecticut men." He came to regard the Connecticut soldiers as his own children.

I have often thought that he bore the burden of all those who had relatives in the field, and the sorrows of all those who were bereaved. No wonder that he won for himself that choice and touching appellation, "The Soldiers' Friend." The strain on mind and body was intense. The equipment and forwarding of troops required constant activity. He was frequently in camp, looking after the welfare of the recruits. Not a regiment left the State but he was present at its departure, bidding it Godspeed, and inspiring it with "words of lofty cheer." Not a regiment returned from the field that he did not welcome back to the State. It was no easy thing for him to accept regiment after regiment of the bravest and best of Connecticut's young men, and send them forth to battle, in the full assurance that many of them would only return wrapped in the flag they had died to sustain. How his sympathetic heart must have been wrung with grief, as, in all parts of the State, he followed to the grave those who had fallen in the fight, and were brought home to rest in the sepulcher of their fathers! Sad days, tearful hours, were those; to none more so than to Governor Buckingham. But whatever others might do, he must not falter. Whatever discouragement others might feel, he must be ever hopeful.

Few men maintained, through all the vicissitudes of the war, the same undoubting confidence in final victory as he. Here his grand faith sustained him. For him

To doubt would be disloyalty;  
To falter would be sin.

To his trusting heart the war was God's own conflict, in which He, in His own good time and way, would surely triumph. No child ever believed more simply and truly in a father's ability to accomplish results than Buckingham believed God would cause the right to prevail in the conflict. This belief pervaded all his State papers and characterized all his private utterances; it steadied the State when it needed steadying. An extract or two from his messages will show this. In his message of May, 1862, he said:

"We should, to the force of these right arms, add that moral power, which is drawn from the deep conviction that our cause rests upon the same pillars of justice and equity which uphold the government of Jehovah. The decision will not be one of blind chance, but will be directed by God to accomplish His purposes."

He closed his message at the special session of the Legislature in December, 1862, in these characteristic words:

"Let us give our energies to the work of suppressing this rebellion. Press on to the path of duty, and humbly trust in Him who holds the destinies of nations in His own counsels to work out the salvation of our beloved country."

And again, in May, 1864:

"No peace can be insured to the subjects of any government, in heaven or on earth, without the exercise of power sufficient to subdue armed rebellion. . . . Let us embrace this opportunity, and perform these duties with humble confidence that, under the guidance of the King of Kings, this revolution will carry the nation onward in the path of prosperity, intelligence, and influence, and upward to a higher level of freedom, civilization, and Christianity."

He needed all his faith. Sometimes the days were very dark, and the clouds which overhung the Union cause were thick and threatening. Many and sad were the reverses which our armies sustained. Terrible and sore was the grief which pervaded the State when our best loved ones met their fate in the lost battle. Sadder yet were the efforts of rebel sympathizers to thwart the success of our arms. There were times when the love of many waxed cold. The first fervor of patriotic impulse was too intense to continue. Human nature was incapable of prolonging the first abnormal excitement. The time came when it was no longer a question of impassioned zeal, when the war made fearful drafts upon resources and upon men. It became a question of grim endurance.

It is comparatively easy to guide and direct a State when all are exalted to the heroic pitch; but to hold it steady to its high mission of duty in times of despondency and doubt requires rare judgment and force. It was in the doubtful



crises of the strife that Buckingham's character shone brightest. Not so much by his capacity for organization, by his ceaseless activity, by his generous deeds, do we judge what manner of man he was, as by noting how firmly and truly he resisted every tendency toward an ignoble peace, and how nobly he nerved the State to duty when many were ready to abandon the Union cause. I will not at this distance of time speak harshly of any one; but in presenting a faithful sketch of Buckingham's character, I may not omit to say that as Connecticut had its Tories in the war of the Revolution, so it had its peace-makers in the war for the Union. They were numerous after the defeat at Bull Run. For a time it seemed as if enemies at home were to be more effective than enemies in the field. To such an extent did efforts to procure a "cessation of hostilities" and to prevent volunteering proceed that Governor Buckingham issued a proclamation, calling upon the officers of the law to be "active, fearless, and diligent in arresting and instituting legal proceedings for the punishment of those who disturb the public peace, of those who are guilty of sedition and treason, and of those who are embraced in combinations to obstruct the execution of the laws." This bold declaration had its effect, and put an end for the time-being to all public demonstrations looking to an inglorious peace.

But time wore on; the authority of the Government was not restored; large debts had been incurred; every hamlet mourned its dead; the emancipation proclamation emboldened men in saying that the war was being prosecuted rather to abolish slavery than to restore the Union; nearly as many men had been sent to the field as were numbered on its militia rolls at the beginning of the war; reverse after reverse met our efforts; the Rebellion seemed more powerful than ever, and the voice of the peace-maker was again heard in the State.

On May 6, 1863, the Legislature met. It was three days after the battle of Chancellorsville. Fifty Connecticut soldiers lay dead, and one hundred and thirty-five wounded on that stricken field. Five hundred more were on their way to



rebel prisons. Among the dead were dear friends of the Governor, and yet how grandly he said in his message: "The conflict inaugurated at Sumter must go on until the Government shall conquer or be conquered." The conflict did go on until the Government did conquer. The State went on, and its people went on with new effort, new zeal, with restored faith. Whoever faltered or lost hope, Buckingham never did; whoever else proved faithless, there was for Buckingham a "God over all, blessed forever," whom he could trust, whom he did trust to the end. All honor to his more than Roman, his godly firmness; all honor to the men of Connecticut who followed where he led the way; all honor to the fifty-five thousand brave soldiers of Connecticut who conquered peace—a peace which shall endure. A country reunited, a race enfranchised, a nation great, glorious, and progressive—these are the fruits of the spirit which would not hearken to the ignominious cry of peace in our own borders.

I may not omit, in truth, to speak of one trait of his character which, in view of a somewhat changed public sentiment, may perhaps seem harsh and unlovely; if it seems so to others, it does not to me. From the first gun at Sumter to the close at Appomattox, his whole nature was aflame with righteous indignation against those who had attempted to destroy the Nation's life. In his mind, rebellion was an awful crime against the Nation and against God. Crime, in his theology, deserved punishment; to his religious thought, penalty was God's logical vindication of violated law; and so, in his eighth and last annual message, in May, 1865, when the grass had not yet sprouted on the fresh earth which filled the graves of our soldier dead, in less than three weeks from the day when Lincoln was foully murdered, he voiced the universal sentiment of loyal people thus:

"Leniency, without distinction between loyalty and treason, is more certain to subvert the Government than is rebellion itself. Clemency, at the sacrifice of justice, is the abandonment of government. Every field of carnage, every rebel prison, every soldier's grave, and the blood of the martyred President, unite with a violated law and demand the penalty.

Let it be inflicted, beginning with the leaders in crime, and let it be followed up with a firm hand until the innocent and the loyal shall be conscious of security under the vindicated majesty of the law. Then, and not till then, may we safely restore forfeited rights and extend forgiveness with a beneficent prodigality."

Who shall say that he was wholly wrong? And yet he was one of the kindest of men full of the tenderest sympathy—ready to overlook a fault, with an almost womanly love for his friends. Who shall say that justice and love are not consistent? Who shall say that it is not mistaken clemency which pardons unrepentant crime? Who shall say that such mistakes, though lauded as generosity, do not in the long run bear bitter fruit?

Probably not one of the War Governors, who held with steady hand the helm of State during the perilous storm, was more relied on by the President than Buckingham. Very early in the war, foreseeing the magnitude of the contest, he addressed the President a letter setting forth his views on the situation. Many of the suggestions contained in that letter were embodied in the President's message to Congress on the 4th of July, 1861, and from that date onward Lincoln frequently consulted him. It is related of the President that being introduced to a Connecticut gentleman during the war, he quickly and impressively said: "Do you know what a good Governor you have got?" To another he said: "The Connecticut regiments give me no trouble; Governor Buckingham always sends them fully equipped for any emergency."

Well might the President rely on him. The country contained no truer patriot, no safer counselor. There may have been greater men, as the world counts greatness, but Buckingham, by his pure life, by his unselfish loyalty, by his intense love of the right, by his singleness of purpose, by his trust in the Lord of Hosts, earned his right to a place among the "heroes of faith."

Retiring in 1866 from the office to which he had been elected for eight successive years by the people of the State,

he felt that his public work was done, and that he might find the rest he so much needed in domestic life. He was not permitted long to enjoy such repose and pleasure. In 1868 he was called to represent his State in the Senate of the United States. He was a faithful representative—a Senator worthy of the place—a Senator whose only ambition was to act rightly and be useful in his station. He won the regard of his fellow-Senators as he had already won the love of his constituents—by a spotless walk, a patriotic purpose, by devotion to duty.

When the Senate joined with the State in mourning his loss, a brother Senator, now gone to his rest, said of him :

“Sir, I should wrong the memory of Governor Buckingham, and grieve his truthful spirit, only that his spirit is beyond the reach of grief, if I should neglect to bear testimony to one thing: There is, in this unbelieving generation, a loud, if not a large element, desperate, if not devilish, hoping nothing here and fearing nothing hereafter, which screams with derision of the Christian statesman. Standing by the grave of Buckingham, I must not forget to tell the world that he was what I never dared pretend to be—a Christian statesman.”

Much as he honored Connecticut in the Senate, it will be as Governor that he will be longest remembered and most loved. His opportunity and his effort were most conspicuous there.

To-day, after the lapse of years, the State gathers here to honor him who so honored the State. In the vestibule of this noble house, midway between the rent battle-flags whose every tattered shred is a tongue which proclaims the heroism of Connecticut soldiers, we place this statue. Touched by the magic art of the sculptor, the features seem to speak the virtues of our cherished War Governor. We place it thus in this marble hall that, so long as marble and bronze shall last, men, when they look upon that almost living face, shall be reminded that there was a time in the history of the State when Connecticut needed the services of a pure, wise, and strong man, and God provided for the occasion—Buckingham.

“The things which are seen are temporal; but the things

which are not seen are eternal." Marble and bronze are enduring, but character is more enduring than they. Marble may crumble, bronze may be defaced, but the life of Buckingham, already wrought into the very fiber of Connecticut character, is immortal.

At the close of the addresses the benediction was pronounced by the Rev. Dr. George W. Smith, President of Trinity College, acting in the place of Bishop Williams, who had been invited but found himself unable to attend. In his letter to Senator Allen he said: "I most sincerely trust that no inconvenience will occur to the Committee from this unwilling failure on my part, which I the more regret because of my affectionate regard for the late Governor and the honor in which I hold his memory."

The idea of a memorial statue was first suggested at a meeting of the Veteran City Guard of Hartford, in 1881. The same year a petition for it was addressed to the General Assembly and there continued to the next Legislature.

In 1882 a joint special committee recommended the selection of a commission to have in charge the procuring of a suitable statue, the appropriation not to exceed \$16,200. The commission was appointed, and consisted of Gov. Hobart B. Bigelow and Hon. Henry B. Harrison of New Haven, Gen. William A. Aiken of Norwich, George G. Sill of Hartford, and Thomas J. Thurber of Putnam. The sculptor, Olin L. Warner, a native of Connecticut, and of patriotic ancestry, was engaged to execute the statue and set it in place for the sum of \$10,000.

For the unveiling ceremonies the sum of \$6,000 was appropriated, of which an unexpended balance was returned to the Treasury of the State.

The legislative commission on the statue ceremonies was as follows:

JOHN ALLEN, Senator from 21st District.  
CAPT. S. B. HORNE of Winchester.  
E. BURROWS BROWN of Groton.  
JABEZ S. LATHROP of Norwich.  
GEN. WM. H. NOBLE of Bridgeport.  
JAMES W. SPELMAN of Suffield.  
GEORGE F. SPENCER of Deep River.  
JAMES R. AYRES of Orange.  
THOMAS B. WALKER of Coventry.



## REPORT OF THE GRAND MARSHAL.

HARTFORD, June 30, 1884.

*Hon. John Allen, Chairman, etc.*

DEAR SIR:—I have the honor to make the following report concerning the parade of June 18th, on the occasion of the unveiling of the statue to the memory of the late Governor Buckingham.

Immediately on accepting the position of Grand Marshal, I sought and obtained the hearty coöperation of the entire press of the State, daily and weekly, and was able in this manner to call the attention of the survivors of the Union War, in every part of the State, to the proposed veteran parade. The first question to be decided was as to the character of the parade, applications being made from several localities to have it composed of posts of the Grand Army of the Republic. Believing that the action of the General Assembly, authorizing the celebration, contemplated a parade by the old regimental organizations, I decided that it should be of this character; a decision which was approved by your commission, and which the result thoroughly justified. The number of old soldiers and sailors in line (over 7,400) was the largest ever assembled in the State,—with the possible exception of Battle-flag Day. Every organization which went to the war from the State was well represented, with the single exception of the Third Light Battery, which maintains no organization. Except for the intense heat of the day, there was nothing to mar the success of the parade. It was a day which will always be remembered by those who took part in it, and by those who witnessed it.

Volunteer military escorts were accepted from the First Company Governor's Foot Guard, the First Regiment C. N. G., the famous Seventh Regiment N. G. S. N. Y., the Veteran City Guard, and the Asylum Hill Cadets. These commands paraded without expense to the State and added greatly to the pageantry of the occasion.



The following was the order of the parade (including also the names of the secretaries of the veteran regimental organizations, and the number of men present from each):

Platoon of Police.

GRAND MARSHAL.

General Staff, Aids and Signal Corps.

#### FIRST DIVISION.

General JOHN L. OTIS (Tenth C. V.) Marshal.

Colt's Armory Band,

First Regiment C. N. G., Col. L. A. Barbour.

Cappa's Seventh Regiment Band, New York.

Seventh Regiment New York City, N. G. S. N. Y., Col. Emmons  
Clark.

#### SECOND DIVISION.

Lt. H. P. HITCHCOCK, Assistant Marshal.

Band and Rockville Drum Corps.

Hartford Veteran City Guard, Major J. G. Rathbun.

Niles Drum Corps.

Asylum Hill Cadets, Capt. Thos. M. Smith.

#### THIRD DIVISION.

Major A. H. EMBLER, Marshal.

Norwich City Band.

Mattatuck Drum Corps, Waterbury.

Governor's Foot Guard, Hartford, Captain James C. Pratt.

Governor THOMAS M. WALLER and STAFF, Mounted.

Capt. GEO. M. SOUTHMAYD, Assistant Marshal.

The Lieutenant-Governor, ex-Governors of the States, the State  
Officers.

The Buckingham Statue Commission.

Commissioners on the Unveiling Exercises.

The Orator of the Day, United States Senator O. H. Platt.

The Sculptor, Olin D. Warner.

Surviving State Officers of the War Period.

Military Staff of Governor Buckingham.

Judges of the Supreme and Superior Courts.  
 Brigadier-General S. R. Smith, C. N. G., and Staff.  
 Military and Naval Guests.  
 The Mayor of Hartford and the Mayors of other Cities.

#### FOURTH DIVISION.

Col. JACOB L. GREENE, Sixth Michigan Cavalry, Marshal.  
 Weed's Band of Hartford.  
 Union Battalion (Soldiers of other States), Major H. C. Dwight  
 (1,200 men), including Union Veteran Association of  
 New Haven, Captain Clark Peck.  
 Drum Corps.  
 Sons of Veterans, Hartford (30).  
 Drum Corps.  
 Nathan Hale Camp, Sons of Veterans, New Haven (40).  
 Other detachments, Sons of Veterans (30).  
 Captain F. M. BUNCE, U. S. N., Assistant Marshal.  
 Captain Walter Pearce, U. S. N., Aid.  
 Elmwood Band.  
 The Navy Battalion (300 men), Captain Charles A. Stillman.

#### FIFTH DIVISION—(Connecticut Veterans.)

Major-General HENRY W. BIRGE, Assistant Grand Marshal.  
 Aids—Major F. A. Spencer, Capt. C. Quien, Capt. Fred. S. Seymour, Capt. Thomas Burke.  
 Moodus Drum Corps—(16 pieces).  
 Conn. Cavalry Association, Major L. P. Goodwin, Commanding.  
 H. S. Woodward, Adjutant. Field Officers, Capt. I. B. Rogers, Capt. Wm. E. Riley, Lieut. Lester W. Cowles (250 men).  
 Former field officers present: Brevet Brigadier-General, Rev. Erastus Blakeslee, Brevet Lieutenant-Col. Thos. G. Welles, Major L. P. Goodwin, Assistant-Surgeon H. M. Bishop, Chaplain Thomas J. Holmes. (Secretary of the Association, Wm. T. Cook, Ledyard.)  
 Lieut. WATSON H. BLISS, Assistant Marshal.  
 Disabled Officers and Soldiers in carriages.  
 Capt. F. H. WALDRON, Assistant Marshal.  
 First Light Battery, Lieut. G. P. Bliss, Commanding. John T. Sloan, Adjutant (50 men). Former officers present: Capts. A. P. Rockwell, James B. Clinton, Lieutenants S. T. Porter,

S. W. Scranton, George P. Bliss, H. B. Smith, jr., Theron Upson. (Secretary, Theron Upson, Kensington, Conn.)

Second Light Battery, Lieut. P. B. Segee, Commanding. Lieut. H. R. Chaffee, Adjutant (40 men). Other officers present: Lieuts. J. B. Hawley, Miles Gray, Frank H. Whiting. (Secretary, H. R. Chaffee, Bridgeport.)

First Regiment Heavy Artillery, Major-General Henry L. Abbott, U. S. A., Commanding. C. W. Filer, Adjutant (570 men). Former field officers present: Col. H. L. Abbott, Major A. F. Brooker, Col. Levi Woodhouse.

Hubbard Drum Corps—(18 pieces).

Second Regiment Heavy Artillery, Col. Jeffrey Skinner, Commanding. Capt. J. N. Coe, Adjutant (250 men). Other field officers present: Major W. B. Ells, Assistant-Surgeon Robert G. Hazzard. (Secretary, D. C. Kilbourn, Litchfield.)

Capt. JOHN BISHOP, jr., Assistant Marshal.

Essex Cornet Band—(20 pieces).

First, Second, and Third Regiments Infantry (3 months), Major Alexander Warner, Commanding. Lieut. Elijah Eggleston, Adjutant (100 men). (Secretary of three months' organization, Elijah Eggleston, Meriden.)

Lieut. H. S. BROWN, Assistant Marshal.

Lebanon Brass Band—(16 pieces).

Fifth Regiment Infantry, Col. George D. Chapman, Commanding. Capt. E. E. Marvin, Adjutant (206 men). Field officers present: Col. W. W. Parker, Lieutenant-Col. W. S. Cogswell. (Secretary, J. S. Forsyth, Hartford.)

Excelsior Drum Corps, Bridgeport.

Sixth Regiment, Brigadier-General A. P. Rockwell, Commanding. Capt. A. B. Beers, Adjutant (165 men). (Secretary, W. F. Smith, New Haven.)

Higganum Drum Corps—(15 pieces).

Seventh Regiment, Major-General Joseph R. Hawley, Commanding. Ira E. Hicks, Adjutant (181 men). (Secretary, Stephen Walkley, Southington.)

Wolcottville Brass Band—(20 pieces).

Eighth Regiment, Major H. M. Hoyt, Commanding. Lieut. John S. Lane, Adjutant (207 men). Other field officers present: Brigadier-General Edward Harland, Dr. M. Storrs. (Secretary, Harlan Chapin, Munson, Mass.)

Col. R. FITZGIBBONS, Assistant Marshal.

Winsted Band—(20 pieces).

Ninth Regiment, Col. John G. Healy, Commanding (100 men).

Lieut. Wm. Gleeson, New Haven, Adjutant and regimental Secretary.

Kellogg Post Drum Corps.

Tenth Regiment, Brigadier-General E. S. Greeley, Commanding.

Lieut. Benj. Wright, Adjutant (205 men). Former field officers present: Gen. J. L. Otis, Gen. E. D. S. Goodyear, Quartermaster H. K. Parsons, Surgeons A. T. Douglass, M. T. Newton, C. R. Hart, L. H. Pease, Chaplain H. Clay Trumbull. (Secretary, D. L. Durand, Birmingham.)

Middletown Drum Corps—(20 pieces).

Eleventh Regiment, Capt. E. H. Foote, Commanding. Capt.

Henry Eastman, Adjutant (101 men). Among officers present was Capt. S. B. Horne of the Buckingham Day Legislative Commission. (Secretary, A. E. Carey, Greeneville, Conn.)

Maj. C. H. OWEN, Assistant Marshal.

Poquonock Drum Corps—(17 pieces).

Twelfth Regiment, Capt. L. A. Dickinson, Commanding. Capt.

James E. Smith, Adjutant (208 men). (Secretary, H. P. Clapp, Hartford.)

Columbia Brass Band of Branford—(20 pieces).

Thirteenth Regiment, Col. Homer B. Sprague, Commanding.

Capt. W. C. Gardner, Adjutant (175 men). Former field officers present: Col. H. W. Birge, Lieutenant-Colonel Alexander Warner, Dr. George Clary. (Secretary, J. C. Kinney, Hartford.)

Douglas Drum Corps of Middletown.

Fourteenth Regiment, Major John C. Broatch, Commanding. Major

Wm. B. Hincks, Adjutant (158 men). Former field officers present: Col. Dwight Morris, Lieut.-Col. S. A. Moore, Major James B. Coit, Dr. P. H. Rockwell, Dr. Levi Jewett, Chaplain, H. S. Stevens. (Secretary, J. W. Knowlton, Bridgeport.)

Sassacus Drum Corps of Meriden—(10 pieces).

Fifteenth Regiment, Capt. M. A. Butricks, Commanding. Capt.

P. C. Rand, Adjutant (200 men). Field officers present, Col. C. L. Upham, Lieut.-Col. Samuel Tolles. (Secretary, P. C. Rand, Meriden.)

Manchester Silver Flute and Drum Corps.

Sixteenth Regiment, Lieut.-Col. F. W. Cheney, Commanding.  
Capt. John B. Clapp, Adjutant (219 men). (Secretary, B. F. Blakeslee, Hartford.)

Capt. S. G. BLAKEMAN, Assistant Marshal.

Seventeenth Regiment, Capt. H. P. Burr, Commanding. George W. Keeler, Bridgeport. Adjutant and Secretary (200 men).  
Field officers present: General W. H. Noble (of Legislative Commission). Col. Henry Allen.

Twentieth Regiment, Capt. S. E. Chaffee, Commanding. Capt. James Spruce, Adjutant (253 men). (Secretary, W. W. Morse, New Haven.)

Mansfield Drum Corps of Middletown—(15 pieces).

Twenty-First Regiment, Major Wm. Spittle, Commanding. J. B. Baldwin, Adjutant (252 men). (Secretary, J. A. Brown, Mount Hope, Conn.)

Tubbs' Band of Norwich.

Eighteenth and Twenty-sixth Regiments (combined by special request of Norwich soldiers), Col. Joseph Selden (26th), commanding. Capt. J. E. Woodward, commanding Eighteenth, Lieut. Wm. Caruthers, Adjutant (250 men). (Secretary of Eighteenth Association, I. L. W. Huntington, Norwich.)  
N. D. Sevin, Norwich, Adjutant and Secretary of 26th. (140 men).

Hazardville Brass Band—(22 pieces).

Twenty-second Regiment, Col. Geo. S. Burnham, commanding. Lieut. D. W. C. Skilton. Adjutant (316 men). Lieutenant-Col. E. N. Phelps. (Secretary, H. R. Morley, Hartford.)

Lieutenant GEO. W. TUCKER, Assistant Marshal.

Bethel Band—(20 pieces).

Twenty-third Regiment, Major David H. Miller, commanding. Lieut. Wm. B. Betts, Adjutant (125 men). (Secretary, Wm. H. Hine, Bridgeport.)

Twenty-fourth Regiment Field Music—(10 pieces).

Twenty-fourth Regiment, Lieutenant-Col. J. D. Allison, commanding. Lieut. A. H. Conklin, Adjutant (182 men). (Secretary, George W. Moses, New Haven.)

Meriden Band—(22 pieces).

Twenty-fifth Regiment, Colonel George P. Bissell, commanding. Lieut. A. W. Converse, Adjutant (226 men). (Secretary, H. A. Kippen, Hartford.)



## Drum Corps.

Twenty-seventh Regiment, Lieut. E. A. Smith, commanding.  
Lieut. F. M. Chapman, Adjutant (120 men). (Secretary,  
A. D. Baldwin, New Haven.)

Twenty eighth Regiment, Lieutenant-Col. W. T. Batcheller, commanding. Lieut. E. E. Palmer, Adjutant (84 men). Major Wm. B. Wescome. (Secretary, B. F. Marsh, West Winsted.)

## Drum Corps.

Twenty-ninth and Thirtieth Regiments, consolidated, Lieutenant-Col. F. E. Camp, commanding. Major (Rev.) Edward W. Bacon. Adjutant, Edward Coe (130 men). Former field officers present, Col. Wm. B. Wooster, Col. David Torrance. (Secretary, Edward Coe, New Haven.)

It should be stated that after the various organizations had reported the number present, there were a large number of fresh arrivals on delayed trains.

Headquarters tents (provided by the Quartermaster-General's department in accordance with a resolution of the General Assembly) were placed along the river bank of Bushnell Park properly designated, and the veterans on arriving, easily found their quarters, and formed companies and battalions without delay. The column was formed in platoons of twelve files, closed in mass, the line being handled by signals from elevated points commanding the entire line and preventing any breaks. The march was begun at 12 o'clock noon, and the head of the column reached the capitol about 2 o'clock. The parade was made through Ford, High, Church, and Ann streets to North Main, down Main, passing around City Hall and Post Office square, to the South Park, through Jefferson and Washington to the Capitol. All along the line of march the city was brilliantly decorated, and fully seventy thousand people witnessed the parade. During its progress a national salute was fired and all the church bells were rung.

It had been intended to mass the command at the south front of the capitol, in order to march through the building after the unveiling exercises. But owing to the intense heat and the lack of shade this seemed impracticable. The mili-

tary escort was accordingly excused and the veteran line was directed at once to the dining tents on the park.

It is impossible to give too much praise to the magnificent manner in which the Hartford citizens' committee provided for the entertainment of the multitude. Pavilion tents were pitched, with arrangements for seating 6,000 at table, and every seat was filled. The navy battalion and several regimental organizations (some 1,200 in all), had separate dining-places. For the satisfactory manner in which this important work was conducted, the chief credit belongs to Mr. George H. Woods, who had the entire management of the collation. His report, which is full of interesting statistics, is appended. The guard furnished by the First Regiment around the dining-tents did efficient service after a tiresome march, and are entitled to thanks. After dinner the veterans, without attempting to re-form into companies, visited the capitol, to inspect the statue, and to look again upon the old battle-flags.

Under the direction of your commission a handsome United States flag of silk was furnished to each organization, to be borne in the parade. The organizations were permitted to retain these as souvenirs of the day, and for use at future reunions.

I am indebted for valuable assistance in preparing for and conducting the parade to the individual members of my staff, which was composed as follows:

#### GENERAL STAFF.

Major-General HENRY W. BIRGE, 13th C. V., Assistant Grand Marshal.

Captain WM. BERRY, 12th C. V., Department Commander G. A. R., Chief of Staff.

Major J. HARTWELL BUTLER, U. S. Army, Adjutant-General.

General L. A. DICKINSON, Captain 12th C. V., Hartford.

General (Rev.) ERASTUS BLAKESLEE, New Haven, 1st Conn. Cavalry.

Dr. ARCHIBALD T. DOUGLAS, New London, Surgeon 10th C. V.

Dr. WILLIAM M. MATHER, Suffield, Surgeon 173d N. Y. V.

Rev. HENRY CLAY TRUMBULL, Philadelphia, Chaplain 10th C. V.

Rev. J. H. TWICHELL, Hartford, Chaplain Sickles's Brigade.  
 Lieutenant JOHN C. ABBOTT, U. S. Signal Corps.  
 Major C. L. BURDETT, 1st C. N. G., Engineer.

## AIDS.

Colonel DAVID TORRANCE, 29th C. V., Birmingham.  
 Colonel HENRY ALLEN, 17th C. V., New Haven.  
 Colonel FRED BARTON, 10th Mass., New Haven.  
 Lieutenant Colonel EDWIN D. JUDD, U. S. Army, Hartford.  
 Major A. L. GOODRICH, 1st Regt. C. N. G., Hartford.  
 Major F. A. SPENCER, 2d Col., Cavalry; Waterbury.  
 Chaplain HENRY UPSON, 13th C. V., New Preston.  
 Captain HENRY E. TAINTOR, 1st H. A., Hartford.  
 Major CHARLES E. DOTY, 17th C. V., South Norwalk.  
 Major B. F. BLAKESLEE, Lieut. 16th C. V., Hartford.  
 Lieutenant THOS. W. GLEASON, 1st. C. N. G. (in charge of signal stations), Hartford.

## ASSISTANT MARSHALS.

Brig. Gen. John L. Otis, 10th C. V., Leeds, Mass.  
 Capt. Francis M. Bunce, U. S. Navy, Hartford.  
 Col. Jacob L. Greene, 6th Michigan Cavalry, Hartford.  
 Col. Geo. P. Bissell, 25th C. V. Hartford.  
 Col. George W. Tucker, Lieut. 23d C. V., Waterbury.  
 Lieut. Col. A. H. Embler, 82d N. Y., New Haven.  
 Major Henry C. Dwight, 27th Mass., Hartford.  
 Major J. G. Rathbun, Hartford City Guard Veterans.  
 Major Chas. H. Owen, 1st H. A., Manchester.  
 Capt. John I. Hutchinson, 7th C. V., Essex.  
 Capt. Erwin D. Hall, 8th C. V., Meriden.  
 Capt. Christian Quien, 11th C. V., Danbury.  
 Capt. Thomas Burke, 16th C. V., Hartford.  
 Capt. S. G. Blakeman, 17th C. V., Birmingham.  
 Capt. Fred. H. Waldron, 1st H. A., New Haven.  
 Capt. John Bishop, 2d C. V., and 1st H. A., New London.  
 George Jessup, 15th N. Y. H. A., Winsted.  
 Capt. Fred. S. Seymour, 14th C. V., New Britain.  
 Capt. George M. Southmayd, 11th C. V., Middletown.  
 Capt. Walter Pearce, Master U. S. N., Hartford.

Capt. James W. Lay, 3d Ill. Cavalry, Branford.  
 Lieut. Henry S. Brown, 6th C. V., Hartford.  
 Sergt. Watson H. Bliss, 25th C. V., Hartford.  
 Private P. C. Lounsbury, 17th C. V., Ridgefield.  
 Hon. Chas. H. Pine, Private 2d H. A., Ansonia.  
 Lieut. H. P. Hitchcock, City Guard Veterans, Hartford.

Included in this number are the committees appointed by the Army and Navy Club, the Grand Army, and the Hartford City Guard Veterans, to urge upon the General Assembly the authorization of the parade, and whose efforts to this end were doubtless influential. These committees were as follows: Army and Navy Club (appointed June, 1883), Col. Henry Allen, Charles H. Pine, Col. George P. Bissell, P. C. Lounsbury, and J. C. Kinney. Grand Army (appointed Jan. 31, 1884), Capt. S. B. Horne, Capt. Wm. Berry, Col. Joseph Selden, Capt. H. E. Taintor, Capt. S. G. Blakeman. City Guard Veterans (appointed Jan. 9, 1884), Julius G. Rathbun, Col. Bissell, Major B. F. Blakeslee, W. H. Kelsey, H. P. Hitchcock.

I am also indebted for hearty coöperation and support throughout to the members of your commission, especially to the executive committee. To yourself, the chairman, fell, among many other duties, the task of arranging for special rates on the railroads, without which the attendance would have been greatly lessened.

I have the honor to be, very respectfully,

Your obedient servant,

J. C. KINNEY,  
*Grand Marshal.*

#### THE ENTERTAINMENT COMMITTEE.

HARTFORD, June 25, 1885.

MAJ. J. C. KINNEY, *Grand Marshal, Buckingham Day:*

*Dear Sir,*—I herewith submit the following report of the Entertainment Committee:

The dinner was served under four tents of the following dimensions: one 400 feet  $\times$  50, two 250  $\times$  50, one 170  $\times$  80.



The whole length of tables was six thousand five hundred feet,—nearly a mile and one quarter. About seventeen thousand feet of lumber was used in constructing tables, etc. Fifteen thousand five hundred pieces of crockery were used on the tables in serving the dinner.

#### BILL OF FARE.

The provision for lunch and dinner consisted of the following:

Corned Beef, 2,300 lbs.; Ham, 3,000 lbs.; Tongue, 1,150 lbs.; making a total of six thousand four hundred and fifty pounds of meat bought and contributed. Sandwiches, 14,000; Doughnuts, 14,000; Biscuit, 18,000; Eggs boiled, 6,144; Bread, 300 lbs.; Gherkins, 2 barrels; Cheese, 300 lbs.; Oranges, 6,000; Bananas, 6,000; Peanuts, 60 bushels; Coffee, 630 lbs.; Milk, 800 quarts; Sugar, 328 lbs.; Cigars, 6,000.

Three tanks, with a capacity of five hundred gallons each, were made expressly for cooking the coffee; over two thousand gallons were served during the day.

What meats were not used at the dinner were distributed among the poor the following day; there were about five hundred pounds so disposed of.

As soon as the veterans began to arrive in the morning the lunch-tent was opened to those who had procured their dinner-tickets, which had a lunch coupon attached. The ticket and coupon system worked admirably, as it secured to those who were entitled to lunch and dinner an opportunity to get them, and protected the committee against feeding the general public. The coupons taken up showed that nearly four thousand received lunch before the line was formed. Many thankful expressions were heard from the veterans, which proved this to be a popular feature of the celebration, as the men who came from a distance were not obliged to parade with empty stomachs.

While plates were laid for six thousand, dinner was served to at least five hundred more than this number. This is aside from the organizations which had separate dining arrangements. It was impossible for the committee to ascer-



tain in advance the exact number to provide for, so they took the estimate of six thousand. It will be seen by the bill of fare, as given in this report, that none needed to go away hungry.

A feature of the entertainment should not be overlooked, viz., the placing about the Park of fifty barrels, which were kept filled with ice-water during the day. The soldiers and citizens have the president of the Spring-Brook Ice Company to thank for the liberal contribution of ice, and keeping the barrels replenished.

The Entertainment Committee consisted of about fifty members. In conjunction with them were over three hundred volunteer aids, who assisted in serving the dinners. One large delegation of volunteers were young men from the High School. Delegations were furnished from nearly all the large manufacturing establishments in the city. The success of the dinner is due to the hearty co-operation of the entire committee, who put forth every effort to carry out the plans as laid out.

Not only the committee, but the citizens generally, lent every aid to make the soldiers feel that they were more than welcome to the city and its hospitality. They were not unmindful that the veterans and citizens from all parts of the State were here to do honor to the memory of one of whom "Nature might stand up and say to all the world, 'This was a man.'"

Very truly yours,

GEO. H. WOODS,

*Chairman Entertainment Committee.*

#### THE SECRETARY'S REPORT.

To the Honorable Commission appointed by the General Assembly of Connecticut at its January Session, 1884, to whom were entrusted the duties and ceremonies relating to the inauguration of the statue of the late Governor Buckingham, at the Capitol of the State.

I have the honor, as your duly appointed Secretary, to report—

That the Honorable Commission held many meetings in discharge of its duties. It was determined that the statue of Governor Buckingham should be placed in the west vestibule of the Capitol, in a position facing the entrance, and the Committee on the Capitol grounds were requested to remove the figure of the Genius of Connecticut, then occupying the place selected, to some suitable locality in the Capitol. It was determined that the ceremonies connected with the unveiling of the statue should take place on the 18th day of June last.

Major John C. Kinney of Hartford was appointed Grand Marshal of the day, with authority to designate his staff, and to take the entire charge of military ceremonies of the day.

Hon. Henry B. Harrison of New Haven was requested to present to the State the statue, and his Excellency Thomas M. Waller, Governor of the State, was requested to accept the same for and in behalf of the State.

The Hon. Orville H. Platt, United States Senator of this State, was requested to deliver an oration on the occasion.

The Rev. Daniel Merriman, D.D., former pastor of the Church in Norwich of which Governor Buckingham was a member, was invited to make the opening prayer, and Bishop Williams of the Diocese of Connecticut to pronounce the benediction, at the unveiling ceremonies. Owing to illness Bishop Williams was unable to attend, and the Rev. Dr. George W. Smith, President of Trinity College, officiated in his stead.

Upon a Resolution of the General Assembly, Gen. Thomas McManus, Quartermaster-General, furnished the requisite tents for the headquarters of the veteran and other military organizations taking part in the ceremonies of the day.

Suitable badges commemorative of the occasion were procured by Gen. Wm. H. Noble.

An invitation was extended to the veterans of this State who had served in the late Rebellion, and to the veterans of other States now residing here, to take part in the ceremonies. The Governor's Foot Guard and the First Regiment

of this State having offered their services, they were invited to act as a military escort.

The distinguished Seventh Regiment of New York and their Veteran Organization were invited to be present, and all military organizations present were to be assigned positions in line by the Grand Marshal.

Suitable memorial flags were procured by order of your commission, to mark the regimental headquarters of the several organizations engaged in the late war.

Your Honorable Chairman and Gen. Wm. A. Aiken were requested to extend invitations to the relatives of Gov. Buckingham to be present at the ceremonies.

Invitations were also extended to the President of the United States, the Chief-Justice of the United States, the Secretary of War, the Judges of the Supreme and Superior Courts of this State, the Senators and members of Congress from this State, Brig.-Gen. Smith and Staff, and the honorable members of the General Assembly to be present.

At the final session of your Honorable Commission at Hartford, on the 10th day of February, 1885, the audited accounts of the expenses incurred and paid were presented and the same approved by the Commission.

It was also unanimously *resolved*, that the thanks of this Commission and of this State were eminently due to the Honorable John Allen, Chairman of the Commission, and Senator from the Twenty-first District of Connecticut, for the very able, careful, and efficient manner in which he had taken executive charge of the most important duties of the Commission, and for the dignity with which he presided over the ceremonies of the day, and he was requested in behalf of the Commission to present a report of its proceedings to the Honorable General Assembly at its present session.

It was likewise *resolved*, that the valuable, most assiduous and appropriate services of the Honorable Secretary of this Commission are entitled to our heartiest recognition and thanks.

E. BURROWS BROWN,  
*Secretary of the Commission.*

